4.2 NON-GOVERNMENTAL ORGANIZATION COMMENT LETTERS

Comment Responses to Green Duwamish Watershed Alliance (NGO 1) and Friends of the Green River (NGO 2)

NGO 1-1 and NGO 2-1

See General Comment Responses 3 and 23.

NGO 1-2 and NGO 2-2

See General Comment Response 7. The commenter is correct in implying that forests influence water quality and stream function in a number of ways. As suggested in the comment, forest vegetation can: 1) stabilize soil and filter surface flows to reduce the amount of fine sediment entering streams; 2) moderate the effects of storm events on stream flows; 3) provide shade that can reduce peak surface water temperatures; and 4) provide physical habitat (large woody debris) for fish and wildlife (see HCP subsection 5.3.2). All of these functions were considered in the development of the HCP, and all are accounted for in the riparian and upland management measures identified in Chapter 5 of the HCP.

Streambank integrity, vegetative filtering of surface flows, shade, and large woody debris would be provided by maintaining no-harvest forest buffers along all streams on the Covered Lands. Buffers will range from 25 feet wide on intermittent non-fish-bearing streams (DNR Type 5) to 200 feet wide on large fish-bearing streams (DNR Types 1 and 2). Streams within the Natural Zone would have even wider buffers. These buffers would meet or exceed the buffers prescribed by the recent Washington Forests and Fish Report, which represents the state of the art in commercial forestland management for fish and water quality.

NGO 1-3 and NGO 2-3

See General Comment Response 8.

NGO 1-4 and NGO 2-4

The Services and Tacoma Water agree that a flow regime that better mimics the natural flow regime of the Green River is desirable (see General Comment Response 27). Because it represents a small

fraction of the highest flows in the Green River (less than 2%), Tacoma's withdrawal will not appreciably affect high flows in the Green River. Furthermore, because high flows generally also represent high turbidity events, Tacoma generally reduces or stops water withdrawal from the mainstem Green River during high flow events.

The primary factor influencing the flow regime in the Green River is operation of Howard Hanson Dam, which is the sole responsibility of the USACE, not Tacoma Water. As noted in General Comment Response 16, the primary vehicle for coordination and flow management adaptation in the future will be the Green River Flow Management Committee. Conservation measures and monitoring to be implemented by Tacoma Water under its HCP would facilitate development of a more natural flow regime if that is the target condition identified by the Green River Flow Management Committee.

NGO 1- 5 and NGO 2-5

See General Comment Response 17. Although Tacoma Water withdraws a substantial portion of the Green River flow during the summer, the minimum flow requirements to be implemented by Tacoma under its HCP would meet or exceed existing instream flow requirements set by Ecology (HCP subsections 5.1.1 and 5.1.2). During extreme, summer low-flow events, conservation measures in the HCP will increase the amount of water in the river compared to baseline conditions. However, Tacoma Water has limited ability to affect water temperature and pollutant concentrations in the middle and lower watershed.

NGO 1-6 and NGO 2-6

See General Comment Response 13.

NGO 1-7 and NGO 2-7

See General Comment Response 22.

NGO 1-8 and NGO 2-8

See General Comment Response 20. The purpose of an HCP is to minimize and mitigate the impacts of any incidental taking authorized by a Section 10 permit, and to ensure that issuance of the permit does not appreciably reduce the likelihood of the survival and recovery of the species in the wild. An HCP is not required to recover listed species or restore habitat damaged by past actions, although

many HCPs, including Tacoma Water's, include measures specifically designed to rehabilitate habitat that is not currently considered to be functioning properly.

Interruption of gravel transport in the mainstem Green River has been primarily the result of construction and operation of Howard Hanson Dam by the USACE. Construction of the Tacoma Headworks in 1912 intercepted approximately 13,500 cubic yards of gravel, equivalent to less than 1 year's supply of bedload (U.S. Army Corps of Engineers 1998; Perkins 2000). In contrast, Howard Hanson Dam has intercepted virtually all of the bedload from the upper watershed for the past 37 years.

Moreover, Tacoma's proposed increase in the height of the Tacoma Headworks would not substantially influence the downstream transport of sediment. Raising the Headworks by 6.5 feet will result in approximately 43,000 cubic yards of increased sediment storage. Assuming that approximately 15 percent of the natural sediment load was bedload (Olympic National Park 1996), the structure would intercept approximately 6,500 cubic yards of gravel. The presence of Howard Hanson Dam upstream of the Tacoma Headworks currently prevents the downstream transport of gravel and larger-sized sediment. Consequently, the actual composition of intercepted materials is expected to be primarily fine sediments.

The volume of gravel-sized sediments that Tacoma Water proposes to add to the river would exceed the amount of material that would be intercepted by the raised Headworks. In addition, the increment of gravel placed by Tacoma under the HCP would be supplemented by gravel placed by the USACE as part of the Section 7 consultation process and jointly by the USACE and King County as part of the Green-Duwamish General Investigation Project. Together, these projects are expected to restore downstream movement of gravel.

NGO 1- 9 and NGO 2-9

See General Comment Response 18.

NGO 1-10 and NGO 2-10

See General Comment Response 4. Water conservation and reuse planning are integral components of Tacoma Water's efforts to protect and restore Green River aquatic resources. These methods alone are not sufficient to restore Green River instream resources, and therefore must be supplemented by other resource planning approaches**.**

NGO 1-11 and NGO 2-11

See General Comment Response 21.

NGO 1-12 and NGO 2-12

The comment letter written by the Sierra Club, Cascade Chapter, has been included as a part of the public record for this DEIS, and comment responses were prepared for the FEIS (see letter NGO 10).

Comment Responses to South King County Chapter Washington Council Trout Unlimited (NGO 3)

NGO 3-1
Comment noted.

NGO 3-2
Comment noted.

NGO 3-3
The USACE currently collects and removes drift (naturally occurring logs and other woody vegetation) from several water control projects in the Pacific Northwest, including Howard Hanson Dam on the Green River. These operations are coming under increased scrutiny due to concerns regarding the effect of these operations on downstream biological resources and the cost and environmental impact of drift disposal (typically by burning).

The issue of handling drift is not isolated to the Pacific Northwest. For instance, the USACE, Huntington, West Virginia, is currently modifying Bluestone Dam to minimize the need to handle up to 50 acres of drift that accumulates at the dam during storm events. Bluestone Dam is located on the New River in West Virginia immediately upstream of a reach designated as a National Scenic River and managed by the National Park Service. Although the New River below Bluestone Dam supports significant whitewater rafting and represents a regional tourist attraction, Bluestone Dam is being modified to allow organic material to be passed downstream during storm events to support downstream biological resources (Halstead and Werth 2000).

An important feature of the proposed Green River Woody Debris Management Program, HCM 2-08 is the commitment to monitor the results of the program and make adjustments as necessary to ensure that the program contributes to the recovery of natural stream processes in view of public health, safety, and flood control concerns.

NGO 3-4
See General Comment Response 18 for a discussion of the objectives of HCM 2-08, Downstream Woody Debris Management Program.

NGO 3-5 through 3-9

See General Comment Response 19 for a discussion of the Woody Debris Management Program and recreational use of the Green River.

Comment Responses to Rainier Audubon Society (NGO 4)

NGO 4-1

HCPs by definition cannot appreciably reduce the likelihood of survival or recovery of species in the wild. In other terms, an HCP cannot contribute to the extinction of any species whether they were or were not considered during the development of the HCP. The Services believe that it will be rare for unforeseen circumstances to result in a jeopardy situation. However, if such an event would occur with respect to Tacoma Water's HCP, the Services will use all of their authorities and resources, will work with other federal agencies to rectify the situation, and will work with Tacoma Water to redirect conservation and mitigation measures to remove the jeopardizing effects. The Services have significant resources and authorities that can be utilized to provide additional protection for threatened and endangered species that are the subject of a given HCP, including land acquisition or exchange, habitat restoration or enhancement, translocation, and other management techniques. In the event that the species continues to decline in light of these preventative measures, the Services retain the right to revoke Tacoma Water's permit in the face of jeopardy.

Discussions between the City of Tacoma and the Services during the development of the HCP were conducted with the knowledge and understanding that issuance criteria (see General Comment Response 3) must ultimately be met before an ITP is issued by the Services. However, the actual determination as to whether Tacoma Water's proposed HCP and ITP have met the issuance criteria will be made after the FEIS and Final HCP have been revised based on public input during the original 78-day comment period, and subsequently released for a second 30-day public review period. If at that time issuance criteria are met, the determination to issue a permit will be documented in the Services' decision documents consisting of the ESA Section 10 findings, ESA Section 7 biological opinions, and a NEPA record of decision.

NGO 4-2

See Specific Comment Response NGO 5-5 and General Comment Responses 11 and 12.

NGO 4-3

See General Comment Response 5.

NGO 4-4

The Services cannot compel Tacoma Water, nor did they compel the City of Seattle, to discontinue logging operations on their lands. It both instances it is the responsibility of the Services to ensure that activities proposed by either Applicant as covered activities under an HCP meet the issuance criteria of Section 10(a)(2)(B) of the ESA. These criteria are listed in General Comment Response 3.

NGO 4-5

See Specific Comment Responses NGO 5-3 and NGO 5-6. There are two different types of HCP recognized by the Services: outcome-based, where the Services and Applicant agree to a set of biological outcomes as the commitments of the permit holder; and prescription-based HCPs, where the Services and Applicant negotiate specific measures, for example the size, number and spacing of live recruitment trees, that are designed to produce habitat attributes or species responses. In the outcome-based HCPs, the Services believe quantifiable goals and objectives must be clearly articulated, or we have no recourse for determining non-compliance during permit implementation. However, with prescription-based HCPs, such as the Tacoma Water HCP, the importance of numeric goals and objectives is reduced, since the legal commitments made by the Applicant are the prescriptions and not the outcome of the prescriptions.

NGO 4-6

See Specific Comment Response NGO 5-7. The comment is incorrect in stating the measure addressing trees in the danger zone are vague. Habitat Conservation Measure 3-01F clearly states, "Danger trees felled in the Natural Zone *will* be left as wildlife habitat, or removed to be used elsewhere to meet one or more of the Conservation Measures of this HCP" (emphasis added).

NGO 4-7

See Specific Comment Responses NGO 5-7 and NGO 5-8. The conditions under which danger tree removal could occur in the Natural Zone are clearly stated in HCM 3-01F.

NGO 4-8

See Specific Comment Responses NGO 5-10, NGO 5-11, NGO 5-12, and NGO 5-15.

NGO 4-9

It is true that the overriding purpose of the ESA is to conserve the ecosystems upon which threatened and endangered species depend. With this in mind, when Congress amended Section 10 of ESA it was its intention that the HCP process and the issuance of ITPs would be used to reduce conflicts between listed species, ecosystem conservation, and economic development. To accomplish this the HCP process allows some individuals of a species to be harmed or taken under an ITP if such take is incidental to otherwise lawful activities, and if such take does not appreciably reduce the chances of survival and recovery of listed species in the wild.

Therefore, although Section 10(a)(2)(B) of the ESA does allow for the take of individuals of listed species and states that HCPs are not required to recover listed species, the Services do recognize that HCPs must be consistent with any federal recovery plans for listed species, and thus must allow for recovery of listed species to occur. In general, the Services believe that HCPs can provide an effective regulatory and management tool for the conservation of listed and unlisted species on non-federal lands.

NGO 4-10

See General Comment Response 4.

NGO 4-11

Tacoma Water has indicated to the Services that it regularly educates its residential and all other ratepayers about the benefits of state-of-the-art water-efficient landscape techniques. Techniques currently supported are numerous and include:

- Seasonal newspaper articles.
- Utility bill inserts.
- Distribution of rain gauges, rain sensors and water-efficient landscape literature at various public venues, such as the Puyallup Fair, and via telephone requests.
- First-hand expert advice to callers interested in water-efficient landscaping.

- In-kind support of the Metropolitan Parks annual Fall Native Plant Sale (Tacoma Water staff has for the last 3 years enhanced the sale catalog, with an expanded selection of native plants, plus plant descriptions that include size and habitat requirements that promote customer education in selecting the right plant for the right place).

- Support and/or facilitation of seminars and other professional programs that target the public, the landscape industry and conservation peers in Idaho, Oregon, and Washington (Tacoma Water staff includes a landscape horticulture expert).

- Periodic irrigation system audits of public agency landscapes.

- Participation in the Water Conservation Coalition of Puget Sound, an organization of utility conservation professionals whose mission is "to promote efficient water use in the Puget Sound region emphasizing water's true value as a natural resource and encouraging conservation." This organization has been involved with Seattle Public Utilities TV and radio campaigns, plus annual education efforts at the annual Northwest Flower & Garden Show.

- Participation with King and Snohomish Counties *Soils for Salmon* programs.

- Education of Washington State University Master Gardeners at annual training sessions and other events such as the American Red Cross Gardens of Tacoma landscape tour.

- Supporting and pursuing scientific research regarding the range of water saved by particular landscape practices such as the incorporation of organic matter.

- Annual provision of free and/or at-cost literature and water-saving devices to wholesale customers, including rain sensors.

- Provision of technical expertise in creation and review of literature and guidelines distributed by the Washington State Department of Health, Ecology and the EPA, as well as utilities and organizations throughout the nation.

Tacoma Water encourages its ratepayers to water their lawns and landscapes efficiently rather than requesting them to forego watering during the summer. Advocating a different approach to lawn care is not in the purview of Tacoma Water, which seeks to let customers choose how they manage and maintain their landscapes.

It should be noted that the conservation efforts listed herein (among others too numerous to list) cannot be promoted effectively by utilities alone. This is because there are numerous institutional and technical impediments that minimize or prevent participation or adoption of water-conserving habits. For example, efforts to update the city and county landscape codes to include soil preparation, minimum standard irrigation equipment, and appropriate plants as designed and/or reviewed by qualified professionals, have been rejected by various entities within the building and landscape communities.

The City of Tacoma has a grass recycling program that is operated by the recycling section of its Solid Waste Utility.

NGO 4-12

See General Comment Response 29.

Comment Responses to National Audubon Society, Washington Chapter (NGO 5)

NGO 5-1

Discussions with the City of Tacoma and the Services during the development of the HCP were conducted with the knowledge and understanding that issuance criteria (see General Comment Response 3) must ultimately be met before an ITP is issued by the Services. However, the actual determination as to whether Tacoma's proposed HCP and ITP has met the issuance criteria will be made after the FEIS and Final HCP have been revised based on public input during the original 78-day comment period, and subsequently released for a second 30-day public review period. If at that time issuance criteria are met, the determination to issue a permit will be documented in the Services' decision documents consisting of the ESA Section 10 findings, ESA Section 7 biological opinions, and a NEPA record of decision. Prior to this, it is premature for the Services to conclude that that Tacoma Water's HCP does not meet the requirements of Section 10 of the ESA.

NG0 5-2

Comment noted.

NGO 5-3

The biological goals and objectives of an HCP are the desired outcome of the HCP's conservation measures. Although not explicitly stated in Tacoma Water's HCP, as will be required in all future HCPs under the new "5 Point Policy" (65 FR 35242), the Services believe that the Tacoma Water HCP has incorporated biological goals and objectives in the habitat conservation measures of its HCP. For additional information on the biological goals and objectives of the HCP, see Specific Comment Response NGO 5-6.

NGO 5-4

The "5 Point Policy" requires the use of adaptive management in an HCP if significant biological uncertainty exist for Covered Species. Where Tacoma Water and the Services have identified significant biological uncertainty, it was addressed through the application of adaptive management. Specifically, subsections 6.2 and 6.3 of the HCP address where and when adaptive management would be used to respond to new information or changing conditions. Chapter 6 of the HCP also includes subsections on compliance monitoring to ensure HCP conservation measures are being implemented as agreed under the HCP and IA.

NGO 5-5

The cessation of timber harvesting on Tacoma Water lands in the Upper Green River Watershed is not a reasonable alternative under Section 10 of the ESA. While the primary purpose for owning the lands is to protect water quality, the City of Tacoma has determined that it will also manage the lands for commercial timber production where such management is not in conflict with the maintenance of water quality. This is an option that is fully within Tacoma Water's rights as a landowner. If Tacoma Water chose not to conduct commercial timber harvesting on its lands, the risk of incidental take of listed species on those lands would be negligible, and the need for ITP coverage would no longer exist. The Services do not consider the complete avoidance of covered activities (and therefore elimination of the need for the ITP coverage) to be a practical form of mitigation for an ITP.

The Services do not anticipate that the level of incidental take proposed for authorization under Tacoma Water's ITP would result in "severe risks to the viability of permitted species," as suggested by the commenter. Tacoma Water has requested ITP coverage for impacts to listed and unlisted fish and wildlife in the upper watershed that might result from commercial timber harvesting and other forest management activities. Most of the Covered Species are uncommon on the Covered Lands, and the level of timber harvesting proposed would be relatively low when compared to Tacoma's total ownership.

For a discussion of the pertinence of the Seattle Public Utilities' HCP to the Tacoma Water HCP, see General Comment Response 3.

NGO 5-6

This comment incorrectly characterizes the Tacoma Water HCP. The HCP follows the general conservation approach established in the federal Northwest Forest Plan, and it includes a number of very specific and quantifiable objectives for the maintenance of wildlife habitat. Habitat Conservation Measure 3-01B requires that 39.3 percent of the Covered Lands (5,580 acres) be managed to protect existing late-seral coniferous forest habitat and allow additional habitat to develop naturally. Habitat Conservation Measure 3-01C requires than an additional 34.8 percent of the Covered Lands (5,180 acres) be managed to promote the development of late-seral coniferous forest habitat, and to protect that habitat once it develops. Habitat Conservation Measure 3-01D requires that the remaining 25.9 percent of the Covered Lands (3,858 acres) be managed on long harvest rotations (at least 70 years), and that the annual rate of harvest be held to no more than 1.5

percent of the total area (approximately 60 acres). Habitat Conservation Measure 3-01G requires the retention of specific numbers of live trees, snags and logs, and the creation of snags where they do not already exist. When combined with the monitoring and evaluation measure EEM-01, HCM 3-01G provides very specific and quantifiable objectives for snag and log habitat over the long term. Lastly HCMs 3-02A and 3-02B provide specific and quantifiable objectives for the retention of riparian forest habitat on the Covered Lands and the protection of aquatic habitat.

All HCMs and EMMs are provided in HCP Chapters 5 and 6. In both chapters, the specific measures are highlighted in text boxes to minimize confusion over the commitments during implementation and monitoring. The text following the highlighted and boxed commitment explains the rationale and need for the particular HCM.

The monitoring and evaluation measure EMM-01 specifically addresses the issue raised by the commenter with regard to objectives for snags, green recruitment trees and logs. This monitoring measure states that if the snag strategy required under HCM 3-01G is not sufficient to meet the needs of the Covered Species, the rate of snag creation would be adjusted. The measure requires the collection of monitoring data on the Covered Lands, but it also allows for the use of pertinent data from elsewhere in the region in determining the adequacy of the HCP for cavity-dwelling wildlife.

The HCP does not give specific numeric targets for snag density and size over the long term because there is no general agreement in the scientific community over the appropriate numbers. Rather, the HCP takes a very conservative approach to green recruitment trees, snags, and logs (more than double the current state requirements) and requires monitoring and adaptive management to evaluate the effectiveness of the prescription over time. In addition, all existing snags in the Natural Zone and the Conservation Zone in stands greater that 100 years old (except those considered danger trees within 150 feet for roads) would remain and other snags would be allowed to develop naturally over the life of the HCP.

NGO 5-7

Habitat Conservation Measures 3-01B and 3-01F allow the removal of danger trees within 150 feet of roads in the Natural Zone. While this is expected to result in the removal of a small number of trees, it is necessary to maintain safe conditions along these roads. No other danger tree removal or salvage harvesting would be allowed in the Natural Zone.

If a danger tree must be felled along a road in the Natural Zone, it would be left as log habitat or removed to be used elsewhere to enhance fish and/or wildlife habitat. This provision is clearly stated in HCM 3-01F. The rationale for this provision is that large logs may have limited value as habitat along roads, but greater value as instream large woody debris or upland logs in other portions of the Covered Lands. When dealing with limited resources such as large trees, trade-offs are inevitable. In the case of danger trees felled along roads in the Natural Zone, the trade-off would be between the various conservation measures of the HCP, and the overall objective would be to derive the maximum conservation benefit from the felled trees. Again, the actual number of danger trees removed from the Natural Zone is expected to be small, and the impacts to the habitat value of the zone would be negligible.

Habitat Conservation Measure 3-01B also allows for timber harvesting in the Natural Zone to modify fish and wildlife habitat, but only with prior review by WDFW and written approval of the Services. This provision is included in the HCP to cover 12 small habitat enhancement projects (totaling 83 acres), and large woody debris placement/riparian hardwood conversion along 12.7 miles of streams proposed by Tacoma Water and the USACE as part of the mitigation for the Additional Water Supply Project. These mitigation actions were developed and agreed to prior to preparation of the HCP, and it would not be appropriate to preclude them under the HCP. An alternative would have been to designate these areas as Conservation or Commercial Zone rather than Natural Zone, but Tacoma Water and the Services believe there would be greater long-term benefits to fish and wildlife by providing the areas with the other protections afforded lands in the Natural Zone.

NGO 5-8

See Specific Comment Response NGO 5-7 for background on the development of the provision allowing habitat improvement in the Natural Zone. As specified in HCM 3-01B, any such activities will require written approval of the Services, thereby providing assurance that the objectives of the HCP and the requirements of the ESA are met.

NGO 5-9

See Specific Comment Responses STA 1-86 and STA 1-87.

NGO 5-10

This comment refers to HCM 3-01G, which pertains only to the Commercial Zone and stands less than 100 years old in the Conservation Zone. The suggestion that the minimum log size and density allowed in these managed stands are indicative of the Covered Lands overall is incorrect. The Natural Zone (39.3% of the Covered Lands) and riparian buffers in the Commercial and Conservation zones would be no-harvest, and log volume is expected to be considerably higher than in the managed stands subject to HCM 3-01G. Eventually, the Conservation Zone also would be no-harvest, and log volume would increase there. It is not known whether the HCP would result in average log volumes comparable to those observed elsewhere in the range of the pileated woodpecker, but it is anticipated that large log volume would increase under the HCP, and that the pileated woodpecker population on the Covered Lands would likely increase as well.

NGO 5-11

This comment makes a number of incorrect assumptions. Tacoma Water would not harvest 3,858 acres of mature forest, as assumed in the comment. Tacoma Water would practice even-aged management in the Commercial Zone (which totals 3,858 acres), but most of this zone is currently young second growth. Only about 97 acres of the forest in the Commercial Zone are over 100 years old, and nearly half of that is in riparian buffers or upland management areas that would not be harvested under the HCP. The result is than only about 58 acres of coniferous forest over 100 years old would be clearcut harvested under the HCP.

The comment also assumes that seasonal buffers represent the only management for the Pacific fisher under the HCP. In reality all uplands in the Natural and Conservation Zones, as well as riparian zones (roughly 8,316 acres, or 56%, of the Covered Lands) would be managed to develop and maintain conditions suitable for Pacific fisher denning and hunting. Added to this would be the extensive network of no-harvest riparian buffers in the Commercial Zone. These areas would collectively provide several thousand acres of the type of forest described in the comment (i.e., forest with high canopy closure, abundant large woody debris, and large cavity trees). Pacific fisher dens, if they are present on the Covered Lands, are expected to occur in these mature forest habitats, where they would be protected permanently. Seasonal den site protection is simply a final precaution to minimize the impacts of disturbance that might result from harvest activities in the Commercial Zone and habitat improvement in stands less than 100 years old in the Conservation Zone. Also see Specific Comment Response STA 1-115 for a discussion of habitat conditions for the Pacific fisher under the HCP.

NGO 5-12

See Specific Comment Responses STA 1-127 and NGO 5-11. More than half the Covered Lands will be managed to maintain and enhance late-seral coniferous forest that can serve as nesting and hunting habitat for the northern goshawk. As the amount of habitat increases on the Covered Lands, the population of goshawks is likely to increase as well. Seasonal nest site protection is only a minor part of the overall strategy for goshawk management. It is intended to minimize the impacts associated with the low level of harvest and habitat improvement activity that would go on annually.

NGO 5-13

See Specific Comment Responses STA 1-135 and NGO 5-10.

NGO 5-14

See Specific Comment Response STA 1-138. Impacts to Vaux's swifts would be negligible because snags of sufficient size and age to support the species are uncommon in the second-growth forest that will be harvested under the HCP. Such snags are more likely to occur in mature forest, which will be protected within the Natural Zone. Nevertheless, all safe snags in the Commercial and Conservation Zones would be retained during harvest and habitat improvement activities. In addition, under HCM 3-04T, preference would be given to protecting snags and live trees with the potential to be used by Vaux's swifts.

NGO 5-15

See Specific Comment Responses STA 1-141 through 1-145. Tacoma Water would not harvest "occupied" or "suitable but un-surveyed" marbled murrelet habitat under the HCP. The only potentially suitable marbled murrelet nesting habitat on the Covered Lands is in the Natural Zone, where it will be protected for the term of the HCP. As required by HCM 3-04W, Tacoma Water would also observe seasonal buffers around occupied marbled murrelet habitat on lands adjacent to the Covered Lands. In response to this and other comments on the HCP, HCM 3-04W has been modified to extend seasonal protection to "suitable but un-surveyed" habitat on adjacent lands. This modification would cover the possibility that suitable habitat on neighboring lands might not be surveyed.

NGO 5-16

It is true that the overriding purpose of the ESA is to conserve the ecosystems upon which threatened and endangered species depend, but when Congress amended Section 10 of the ESA it

was its intention that the HCP process and the issuance of ITPs would be used to reduce conflicts between listed species and economic development. To accomplish this the HCP process allows some individuals of a species to be harmed or taken under an ITP, if such take is incidental to otherwise lawful activities and if such take does not appreciably reduce the chances of survival and recovery of listed species in the wild.

Therefore, although Section 10(a)(2)(B) of the ESA via HCPs does allow for the take of individuals of listed species and is not required to contribute to the recovery of listed species; the Services do recognize that HCPs must be consistent with any federal recovery plans for listed species. The HCP must allow for recovery of listed species to occur. In general, the Services believe that HCPs can provide an effective regulatory and management tool for the conservation of listed and unlisted species on non-federal lands.

In the case of this HCP, discussions between Tacoma Water and the Services during the development of the HCP were conducted with the knowledge and understanding that Section 10 issuance criteria for an ITP must ultimately be met before an ITP is issued by the Services. Although the Services have not conducted our final analyses, preliminary analyses suggest that Tacoma Water's HCP would not create an unacceptable level of uncertainty for wildlife resources or create an excessive level of risk to public resources.

NGO 5-17

See Specific Comment Responses NGO 5-1, 5-3, and 5-16.

Comment Responses to Tahoma Audubon Society (NGO 6)

NGO 6-1
See Specific Comment Responses NGO 5-1 and 5-2.

NGO 6-2
Comment noted.

NGO 6-3
Anadromous fish species were blocked from accessing the watershed above Tacoma's Headworks since the early 1900s, and several major conservation measures of Tacoma Water's HCP address the reintroduction of anadromous fish to the upper watershed. Determining which stocks and which species should be considered for reintroduction to the upper watershed is a fish management decision that is beyond the responsibility of Tacoma Water. The WDFW and Muckleshoot Indian Tribe are co-managers of Green River fish and wildlife resources and together with the NMFS and USFWS will evaluate reintroduction of anadromous fish into the upper watershed. However, in order to evaluate potential effects of the HCP, assumptions regarding the distribution and potential for reintroduction above Howard Hanson Dam were defined for each species potentially covered by the ITP. These assumptions were made for planning purposes only and did not represent suggestions by the City of Tacoma regarding fish restoration opportunities.

There are 220 square miles of watershed area and approximately 66 miles of stream and river habitat in the upper watershed that were potentially used by salmon and steelhead. Roughly 24 miles of the 66 miles of stream habitat represent mainstem or large tributary reaches that are suitable for chinook salmon spawning. Although habitat in the Upper Green River Watershed has been degraded by forest harvest activities and construction and maintenance of railroad and power transmission corridors, implementation of upland forest and riparian conservation measures by federal, state, and private landowners will have a positive, long-term effect on upper watershed habitat conditions.

As part of Tacoma Water's proposed conservation measures, implementation of mass wasting prescriptions developed through Watershed Analysis is expected to reduce management-related contributions of coarse sediment. Over the long term, this could reduce the extent of aggraded reaches that consistently experience subsurface flows during dry summers. Reestablishment of riparian forests dominated by coniferous trees greater than 50 years old would increase shade,

moderating elevated summer temperatures caused by lack of adequate shade. Increasing the proportion of riparian stands greater than 50 years of age from 27 to 100 percent would result in a gradual increase in the recruitment of large woody debris. In addition, the increased abundance of late-seral stands is expected to ensure that at least some of the woody debris that enters the stream system is large enough to function as key pieces, which are especially important for forming deep pools in larger channels. Tacoma Water's ownership encompasses most of the mainstem and large tributary habitat preferred as holding habitat by large-bodied salmonids such as chinook, thus temperature reductions and increased woody debris inputs resulting from development of mature coniferous riparian forests on Tacoma Water's lands are expected to be especially beneficial for this species.

NGO 6-4

See General Comment Response 11 concerning the HCP's ability to provide functioning riparian habitat. The Services have found HCPs and the issuance of ITPs to be an effective means of encouraging non-federal landowners to contribute to habitat protection for and restoration of listed species. Requiring a landowner to restore degraded habitat conditions prior to issuing an ITP would be a disincentive for most landowners.

The USFWS criteria for issuance of an ITP are contained in 50 CFR 17.22(b)(2) and 17.32(b)(2). They are: 1) the take will be incidental; 2) the Applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; 3) the Applicant will ensure that adequate funding for the conservation plan and procedures to deal with unforeseen circumstances will be provided; 4) the taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild; 5) the Applicant will ensure that other measures the USFWS may require as necessary and appropriate will be provided; and 6) the Services have received such other assurances as may be required that the HCP will be implemented.

The NMFS issuance criteria contained in 50 CFR 222.22(2) are: 1) the taking will be incidental; 2) the Applicant will, to the maximum extent practicable, monitor, minimize, and mitigate the impacts of such taking; 3) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; 4) the Applicant has amended the conservation plan to include any measures (not originally proposed by the Applicant) that the Assistant Administrator determines are necessary or appropriate; and 5) there are adequate assurances that the conservation plan will be funded and implemented, including any measures required by the Assistant Administrator of the National Oceanic and Atmospheric Administration.

Comment Responses to Center for Environmental Law & Policy (NGO 7)

NGO 7-1

Comment noted. Tacoma Water agrees that protecting the natural functions of the Green River to the greatest extent possible is an important consideration in the use of the river to supply the municipal water needs of Puget Sound communities. Tacoma Water's existing diversion, and its proposed Second Supply Project, admittedly interfere with natural river functions. For that reason, Tacoma Water has spent over a decade, and several million dollars, researching how to balance the use of the river for municipal water supply while protecting natural river processes to the greatest extent possible. The product of this research and extensive coordination with the Muckleshoot Indian Tribe, federal and state resource agencies, local governments, and the public is to be found in Tacoma Water's HCP.

See also General Comment Response 17.

NGO 7-2

See General Comment Response 4.

NGO 7-3

See General Comment Response 27 for a discussion of Tacoma Water's instream flow conservation measures and the desire for natural flow variations.

NGO 7-4

See General Comment Response 17 for a discussion of increasing instream flows to provide additional protection for fish, and General Comment Response 26 for a discussion of the adaptive management provisions of Tacoma Water's HCP.

NGO 7-5

See General Comment Response 26 for a discussion of the adaptive management provisions of Tacoma Water's HCP.

NGO 7-6

See General Comment Response 17 for a discussion of increasing instream flows to provide additional protection for fish, and General Comment Response 26 for a discussion of the adaptive management provisions of Tacoma Water's HCP.

NGO 7-7

As correctly noted in the comment, ESA Section 10 and the No Surprises Policy provide a mechanism for the Services to give Applicants regulatory certainty with respect to federally listed species. In the case of Tacoma Water, that regulatory certainty translates into guarantees as to the withdrawal of water from the Green River as long as conditions specified in the HCP are adhered to. Without those assurances, Tacoma Water could not make the capital improvements necessary to continue meeting the water needs of its customers.

The challenge in developing any HCP is to balance the need of the Applicant for regulatory certainty with the needs of the listed species. The Services believe this balance has been achieved in the case of the Tacoma Water HCP, through a combination of conservation measures and adaptive management. While the results of adaptive management will not result in overall reductions in the amount of water available for withdrawal by Tacoma Water, they may result in changes in the storage and release of portions of that water from behind Howard Hanson Dam. Habitat Conservation Measure HCM 2-02 and Compliance Monitoring Measure CMM-02 commit Tacoma Water to active participation in the development of storage and flow management strategies specifically to benefit fisheries resources in the Green River. While this program is not explicitly identified as adaptive management, it would function as such.

NGO 7-8

See General Comment Response 17 for a discussion of increasing instream flows to provide additional protection for fish, and General Comment Response 26 for a discussion of the adaptive management provisions of Tacoma Water's HCP.

NGO 7-9

Change or modification to the habitat measures committed to in the Tacoma Water HCP would not require approval from Tacoma Water's partners in the Second Supply Project Agreement. Tacoma

Water's HCP commitments to the NMFS and the USFWS are between Tacoma Water and the Services. The partners to the Second Supply Project Agreement would be purchasing the water that is available from the project contingent upon Tacoma Water meeting its HCP commitments. See General Comment Response 15 for additional information.

NGO 7-10

The No Surprises Policy directs the Services and ITP Applicants to address changed circumstances in the preparation of HCPs. The policy defines changed circumstances as changes in circumstances during the course of an HCP that "can reasonably be anticipated and planned for," and instructs that HCPs, "should describe the modifications in the project or activity that will be implemented if these circumstances arise." Subsection 3.2.3 of the Tacoma Water HCP does just that. Future changes with a reasonable chance of occurrence are described, and the actions Tacoma Water would take in response to the changes are identified. When the HCP states that, "No measures beyond those listed below will be required . . .," it is consistent with the No Surprises Policy. The HCP is not saying there will be no response to changed circumstances; it is simply saying that the response will be limited to the actions identified in subsection 3.2.3.

The HCP addresses landslides in subsection 3.2.3.3. As noted in that subsection, provisions to minimize the potential for human-caused landslides on the Covered Lands have already been incorporated into the conservation measures of the HCP. Several of the conservation measures were developed specifically to minimize the potential for landslides, and/or to reduce the environmental impacts of those that occur. Monitoring and adaptive management in response to landslides would occur as part of Watershed Analysis (see HCM 3-03A), which requires regular review and modifications of prescriptions (if necessary) at 5-year intervals. No additional measures are considered necessary in the HCP. The commenter's assertion that there will be no response to landslides is incorrect.

NGO 7-11

See Specific Comment Response NGO 7-10. The IA and HCP are not in conflict. Section 9 of the IA states that Tacoma Water would take the actions listed in HCP subsection 3.2.3 in response to changed circumstances. That same subsection of the HCP lists the required actions, and states that no further actions (beyond those specified) would be required of Tacoma Water. We believe

Tacoma Water's obligations under the HCP, and the Services ability to enforce those obligations, have been adequately stated.

NGO 7-12

Tacoma concurs with the comment that the proposed connection between Seattle and Tacoma does not qualify as an intertie under state law, because an intertie cannot include the development of new sources of supply to meet future demand. However, simply because it does not qualify as an intertie under state law does not mean that a connection between the Seattle and Tacoma Service Areas cannot be developed if such development would include new supplies intended to meet future demand. It simply states that under the definition of RCW 90.03.383, this connection would not qualify as an intertie.

NGO 7-13

See Specific Comment Response STA 2-42.

NGO 7-14

Comment noted.

NGO 7-15

Tacoma has acknowledged that some staff within Ecology believe that an additional water right permit would be required to store water behind Howard Hanson Dam; other staff at Ecology contend that a permit is not necessary. We have also been advised by the USACE that it is their belief that no storage permit is required. If in the future it is determined that Tacoma does need to apply for a water right to store water behind Howard Hanson Dam, then Tacoma would make application for such a permit.

NGO 7-16

Tacoma's current water rights do allow the development of an additional 3,300 acre-feet of storage in the South Tacoma aquifer. This water would be used during the summer in Tacoma during those years when Seattle utilized 10,000 acre-feet of storage at Howard Hanson Dam. Tacoma's conjunctive use of groundwater and surface water allows this flexibility, which in turn provides a significant value to the City of Seattle that would not be possible if the two cities were not joined through the connection between Seattle and Tacoma.

NGO 7-17

The purpose and need of the Proposed Action as stated in subsection 1.2 of the DEIS is to respond to Tacoma Water's permit application in a manner that: 1) provides protection and conservation to listed and proposed species and their habitats to the extent intended under §10(a)(1)(b) of the Act; and 2) allows Tacoma Water to fulfill its water supply obligations in a practical manner. The environmental review process must focus on this Proposed Action, the stated purpose and need for the action, and alternatives to the Proposed Action that will fulfill the purpose and need.

The Proposed Action analyzed in the DEIS is the request for issuance of an ITP from each of the Services. The primary purpose surrounding each alternative to the Proposed Action is to analyze conditions that would affect protected species under the federal ESA, not to permit regional water supplies. As stated in General Comment Response 29, the Services defer to the state of Washington to manage and plan for future growth.

NGO 7-18

The commenter suggests the Services analyze an alternative that does not include the Second Supply Project and therefore prevents Tacoma Water from becoming a regional water supplier. Contrary to the commenter's assertion, the No Action Alternative assumed that Tacoma Water would not pursue the Second Supply Project, and would not become a regional water supplier (see DEIS Table 2-10).

The commenter also suggests we analyze an alternative that includes an HCP without the Second Supply Project component. This was not considered a viable alternative because issuing an ITP without the Second Supply Project would not meet the purpose and need identified by Tacoma Water to fulfill its projected water demands, even within its current service area. Additionally, Tacoma Water would not be able to fulfill its obligations for planned regional supply. These water supply obligations are determined at the state and local levels under Growth Management Act.

See General Comment Response 3 regarding the commenter's suggestion that the alternative they propose should include "an assessment as to whether Tacoma's activities will hinder salmon recovery." The Services' decision-making process does require an analysis of the effects of the Proposed Action on the recovery of listed species. This analysis will be accomplished during preparation of an ESA Section 10 Findings document and an ESA Section 7 Biological Opinion

document. These documents will be prepared following the distribution of the FEIS and prior to ITP issuance.

NGO 7-19

The Services agree the concept of dedicated and non-dedicated storage blocks of water is difficult to follow, but the flow-management benefits of the process made wading through the explanations worthwhile. We found that close review of HCP Figure 5-3 to be particularly helpful in understanding the use of dedicated and non-dedicated blocks of water.

In response to the commenter's stated confusion regarding non-dedicated blocks of water, we offer the following discussion. By Congressional authorization, the USACE must store water at a rate to ensure that prescribed volumes of water have been stored during the spring refill season with a 98 percent reliability. Based on analyses of hydrologic records, the USACE have developed rules to govern the necessary rate of storage. In essence, the reservoir must be filled to a certain level by a calculated date in order to ensure that the full target volume will be stored during the storage window. For instance, in the past the reservoir refill rule has indicated that about 12,200 acre-feet (representing half of the required storage volume of 24,200 acre-feet) be stored by 6 May under average runoff conditions. The volume of stored water that meets the refill rule requirements is considered "dedicated" to that purpose. If water is stored in excess of that needed to meet the refill rule, the excess storage would be considered to be "non-dedicated."

Under the Additional Water Storage Project, the volume of water to be stored would be increased by up to 20,000 acre-feet; however, storage will begin in mid-February, much earlier than previous USACE storage practices. Even with the additional storage requirements, initiating storage in mid-February will provide the opportunity to store water at a rate that exceeds real-time storage requirements. Under the proposed conservation measure, Tacoma Water would contribute funding to have the USACE closely monitor reservoir levels; if water has been stored in excess of that needed to meet refill rules, this non-dedicated water could be subsequently released to manage downstream flows. The non-dedicated portion of the reservoir storage could be released during a late spring drought to augment flows, gradually re-assigned to dedicated blocks of water to reduce later storage requirements, released to increase April and May base flows, or utilized to create a freshet during a late spring period of stable flow, depending on the recommendations of the Green River Flow Management Committee.

This increased flexibility in management of Green River flows appears to be a significant improvement compared to past USACE water storage and release practices.

NGO 7-20

The commenter appears to have misunderstood some of the information provided in the DEIS, although it is difficult for the Services to respond to a specific passage without a page reference. The Services assume this comment refers to the fact that Tacoma Water would have no incentive to prepare an HCP for the upper watershed without the possibility of conducting commercial timber harvesting. This is not a threat; it is a simple statement of fact. Tacoma Water is applying for an ITP to cover, among other things, its timber harvesting and other management activities in the upper watershed. The conservation measures in the HCP specific to the upper watershed are in response to that portion of the ITP. If Tacoma Water were required to cease all timber harvesting in the upper watershed, the risk of incidental take would be negligible, and there would no longer be any need for an ITP. Without an ITP, there is neither the need nor the regulatory mechanism for the Services and Tacoma Water to prepare an HCP. This is not to say that Tacoma Water would not continue to voluntarily implement the conservation measures of the HCP; it simply means that the measures would not be part of any formal agreement between Tacoma Water and the Services. Tacoma Water has already implemented several of the conservation measures on a voluntary basis with no guarantee of an ITP, and the Services would expect no substantial change in the attitude of the City utility if the ITP were not issued.

NGO 7-21

See General Comment Responses 3, 7, and 8.

NGO 7-22

Comment noted. See General Comment Response 4.

NGO 7-23

Tacoma has expressed the intent of continuous compliance with all state regulations regarding conservation on numerous occasions. It is anticipated that state regulations requiring conservation at water utilities will expand in coming years as the importance of water resource conservation and protection becomes more evident. In addition, Tacoma is currently involved in the efforts of the Puget Sound Water Suppliers Forum to develop appropriate criteria for public water utility

conservation programs. However, Tacoma has indicated it does not believe that water derived from conservation alone will be adequate to fulfill the needs of planned regional growth. See General Comment Response 4 for additional information.

NGO 7-24

See General Comment Response 4.

NGO 7-25

Prior to the issuance of any ITP, the Services must ensure that the issuance criteria of Section 10 are met. Among those criteria is the requirement that the proposed incidental take not appreciably reduce the likelihood of the survival and recovery of the Covered Species in the wild. The Services will document the results of their analysis of Tacoma Water's application prior to any decision to issue the permit. If that analysis identifies any needed modifications to the HCP, the Services will ensure those changes are made before the ITP is issued.

NGO 7-26

See Specific Comment Responses NGO 7-1 through NGO 7-25.

NGO 7-27

Comment noted. The Services recognize that society's understanding of the biological and ecological needs of Pacific salmon is continually improving, and will undoubtedly continue to improve with time.

Tacoma Water is proposing to invest approximately $90 million in environmental and ecosystem enhancement and restoration projects to benefit fish and wildlife in the Green River Watershed as a part of its municipal water supply operations and HCP. In addition to its financial investment, the adaptive management component of the City's plan contains provisions that allow the resource agencies a degree of control over modifying river flows to accommodate the varying needs of salmon species and life stages.

Comment Responses to Pacific Crest Biodiversity Project (NGO 8)

NGO 8-1

See General Comment Response 7. The Services are required to process all ITP applications submitted to them. The Services will review the Tacoma Water HCP and IA for compliance with the ITP issuance criteria. See Specific Comment Response NG0 6-4 concerning the issuance criteria for a Section 10(a)(2)(B) permit under the ESA.

NGO 8-2

The Services believe the cumulative assessment provided in Section 4.4 of the DEIS for both wildlife and fish adequately meets NEPA requirements to analyze direct and indirect effects of the Proposed Action on species habitat. Regarding the proposed harvest of 80 acres of forestland, the DEIS specifically analyzes habitat impacts for each of the Covered Species. First, the DEIS assesses related planning efforts aimed at habitat conservation. Secondly, the DEIS summarizes direct and indirect impacts of the Proposed Action on that particular species. Finally, the DEIS combines related planning efforts and impacts to analyze habitat effects within the Covered Lands, province, and western Washington vicinity.

For example, nine separate bald eagle management plans are analyzed that could have a related impact or benefit to individual birds within the vicinity of the Covered Lands. The direct and indirect effect of proposed harvest on bald eagle habitat is then summarized. The analysis of cumulative effects on bald eagles is then detailed for the Covered Lands, Southwest Physiographic Province, and western Washington. This analysis takes into account each of the nine planning efforts as well as proposed harvest levels under the HCP to summarize eagle habitat effects.

We believe this type of analysis adequately meets the goal of the cumulative effects review, which is to analyze and determine the cumulative, regional "conservation contribution" (positive and/or negative) that would result from the Proposed Action for each of the ESA-listed fish and wildlife species covered by the proposed HCP and ITP.

See General Comment Response 30 for a discussion of how the cumulative effects analysis was augmented in the FEIS.

NGO 8-3

See General Comment Response 8.

NGO 8-4

The Services are currently reviewing the HCP and IA for compliance with the Section 10(a)(2)(B) permit issuance criteria. The results of this review will be provided in the Biological Opinion and the findings document.

To assure the quality of the biological, ecological, and other information used in the implementation of the ESA, it is the policy of the Services to: 1) evaluate all scientific and other information used to ensure that it is reliable, credible, and represents the best scientific and commercial data available; 2) gather and impartially evaluate biological, ecological, and other information disputing official positions, decisions, and actions proposed or taken by the Services; 3) document their evaluation of comprehensive, technical information regarding the status and habitat requirements for a species throughout its range, whether it supports or does not support a position being proposed as an official agency position; 4) use primary and original sources of information as the basis for recommendations; 5) retain these sources referenced in the official document as part of the administrative record supporting an action; 6) collect, evaluate, and complete all reviews of biological, ecological, and other relevant information within the schedules established by the Act, appropriate regulations, and applicable policies; and 7) require management-level review of documents developed and drafted by the Services' biologists to verify and assure the quality of the science used to establish official positions, decisions, and actions taken by the Services during their implementation of the Act [59 FR 3471 (July 1, 1994)].

The Services have carefully considered all of the factors noted above and believe that the information presented in the DEIS, draft HCP, and supporting documents does represent the best scientific and commercial data available.

NGO 8-5

See Specific Comment Responses NGO 5-3 and NGO 5-6. Contrary to the suggestion in the comment, an HCP is not required to "fully" mitigate impacts or to contribute to recovery. As stated in the ITP issuance criteria (provided in Specific Comment Response NGO 6-4), the permitted taking must not appreciably reduce the likelihood of the survival or recovery of the species in the wild.

NGO 8-6

See General Comment Response 25 and Specific Comment Responses NGO 5-3 and NGO 5-6. Measurable resource objectives are provided within the various habitat conservation measures in HCP Chapter 5. The effects of the conservation measures are described in HCP Chapter 7. Further analyses of the effects of the HCP on the Covered Species are provided in DEIS Section 4.0. Lastly, the Services will complete additional analyses as part of the Biological Opinion and findings document that will be prepared before any ITP is issued.

NGO 8-7

The primary issue in the case *Sierra Club vs. Bruce Babbitt, et al.* was that the effects of the HCP did not analyze the cumulative effects of the project on the larger population and habitat in the range of the Alabama beach mouse. The analysis for the Tacoma Water HCP is different from the above case in that an EIS was prepared that looked at the cumulative effects of implementing the HCP on each of the Covered Species (DEIS subsection 4.13). The cumulative effects analysis considered other landscape management in the southwest Cascades (Northwest Forest Plan and other HCPs) that will affect the populations and habitat of the Covered Species. The analysis shows that the Covered Lands cover a small proportion of the potential habitat in the Southwest Cascades Physiographic Province, and that the majority of habitat for these species is also covered under the other landscape management in the province (DEIS subsection 4.4.3).

Unlike the Alabama beach mouse case that involved mitigating for the permanent loss of habitat, the Tacoma Water HCP primarily modifies how management activities are conducted on the Covered Lands. The result of management under the Tacoma Water HCP is a maintenance or improvement of habitat conditions for all of the Covered Species in comparison to current conditions and the No Action Alternative (see the effects analysis in the HCP, Section 7.0, and in the FEIS, Section 4.0).

There are also biological differences between the Alabama beach mouse and the species covered under the Tacoma Water HCP. The Alabama beach mouse has a restricted range that is not well defined. The percent of the range of the mouse impacted by the HCP was not known, and the effects upon the larger mouse population were not analyzed. In contrast, the Covered Species are not unique to the state of Washington, and the Covered Lands constitute only a small percentage of the potential range for these species in Washington. The state of Washington has modeled the extent of habitat in core and peripheral zones for all of the Covered Species (Johnson and Cassidy 1997; Smith et al. 1997). Core and peripheral habitats for the Covered Species are well distributed throughout the North Cascades and/or the western Washington lowlands. The Covered Lands encompass only small portions of the potential ranges of the species in Washington.

NGO 8-8

The Services recognize that the current habitat conditions are representative of past management practices that degraded the habitat. The Tacoma Water HCP has been designed to increase the amount and quality of habitat available to the Covered Species. For example, the HCP would increase riparian function and the number and size of snags. The use of current conditions as a starting point for management is appropriate in the Services' opinion.

NGO 8-9

See General Comment Response 28 regarding use of best available science by Tacoma Water in its HCP and EIS analyses.

NGO 8-10

See Specific Comment Response IND 39-5 concerning the value of thinning even-aged stands to promote late-seral forest characteristics.

NGO 8-11

The intent of the proposed thinning is not to create old-growth, but to promote late-seral forest characteristics (e.g., large trees, large snags, large logs, a well-developed shrub and forb layer, and a multi-storied overstory). There is little dispute that thinning promotes tree growth and increases understory shrub development. Large trees can provide nesting and roosting habitat for species such as the northern spotted owl, pileated woodpecker, and Pacific fisher. Large-diameter branches that

may be used by nesting marbled murrelets develop on widely spaced trees (Maquire et al. 1991, as reported in Hayes et al 1997). Large trees with large-diameter limbs will eventually develop large woody debris that can be used by the majority of the Covered Species.

Thinning even-aged conifer stands has been documented to benefit a number of wildlife species. Hager et al. (1996) reported the abundance of breeding birds was greater in thinned stands 40 to 50 years old than in unthinned stands. Stands that had been pre-commercially and commercially thinned were found to have higher than expected species richness of terrestrial amphibians and almost twice the total number of captures at harvest age than other stand structure (Aubry 1997).

NGO 8-12

See General Comment Response 26. Adaptive management is integral to several of the conservation measures, as described in HCP Chapter 6.

NGO 8-13

The Tacoma Water HCP is a habitat-based HCP. The success of the HCP will be assessed according to whether or not it results in the creation and maintenance of habitat for the Covered Species. The maintenance of wildlife populations is dependent on a number of factors other than the availability of habitat, and most of these are beyond the control of landowners like Tacoma Water. For that reason the Services will not require the measurement or monitoring of wildlife populations under the HCP.

In those instances where the implementation of certain habitat conservation measures is triggered by the presence of the Covered Species (e.g., grizzly bear seasonal den site protection), the obligation for detecting the species will be shared by Tacoma Water, the WDFW, and the USFWS. The level of training and reporting provided by HCM 3-04B and 3-04V will be sufficient to satisfy Tacoma Water's obligations.

NGO 8-14

The monitoring and reporting schedules in HCP Chapter 6 will be sufficient to verify compliance. Effectiveness monitoring will also occur for those areas where it is considered necessary (snag creation and site-specific species protection plans). Given the extremely low level of incidental take

expected to occur under the ITP and the conservative nature of the habitat creation and protection measures in the HCP, no additional habitat monitoring is warranted. The need for population monitoring is precluded by the habitat-based nature of the HCP.

NGO 8-15

See General Comment Response 7 and Specific Comment Response NGO 5-5. The Tacoma Water HCP would not be used to eliminate or degrade habitat for any of the Covered Species. The Services have found HCPs and ITP to be an effective means of encouraging non-federal landowners to contribute to species conservation. The Services are also required to review any ITP application that is submitted and to determine whether it meets the issuance criteria (see Specific Comment Response NGO 6-4 concerning the issuance criteria). If the HCP and IA meet the issuance criteria, the Applicant will be issued an ITP.

NGO 8-16

See General Comment Responses 5 and 7, and Specific Comment Response NGO 5-5.

NGO 8-17

The HCP would result in the harvest of a very small amount of mature coniferous forest in the short term (approximately 58 acres over 100 years old). As mitigation, 7,812 acres of Tacoma Water lands (including several hundred acres that currently support mature coniferous forest) would be dedicated to the long-term development and maintenance of late-seral forest characteristics.

It is difficult to categorically state that the standard for issuing an ITP is higher than the standards of the Washington Forest Practices Rules or the Tacoma Water Forest Land Management Plan, particularly in light of the recent modifications to the state rules and the conservative nature of the Tacoma plan. It is accurate, however, to state that the standards are different. The standards pertinent to an ITP are the issuance criteria provided in Section 10(a)(2)(B). The Services will verify that the Tacoma Water HCP meets the issuance criteria before any ITP is issued. While one of the criteria requires that issuance of the ITP not appreciably reduce the likelihood of the survival and recovery of the Covered Species in the wild, the ITP does not require that the HCP contribute to recovery. It is anticipated the Tacoma Water HCP will contribute to the recovery of several of the Covered Species, even though it is not required to do so.

NGO 8-18

See General Comment Response 2.

NGO 8-19

See General Comment Responses 7 and 9, and Specific Comment Responses NGO 5-5 and NGO 8-11.

NGO 8-20

The Services agree that timber harvesting and road construction can affect hydrology and surface water quality. If conducted improperly, these activities can have serious negative environmental effects. For that reason, the Services have worked closely with Tacoma Water to develop the road management and timber harvesting measures in the HCP. The conservation measures in the HCP meet or exceed levels considered necessary to protect water quality and maintain healthy fish and wildlife populations.

The current functions of Howard Hanson Dam (flood control, fish enhancement, and water supply) and the proposed additional function under the Additional Water Storage Project would not be precluded by cessation of timber harvesting on Tacoma Water lands. The City owns roughly 10 percent of the Upper Green River Watershed, and would conduct harvesting on less than 1 percent of its holdings (less than 0.1 % of the upper watershed overall) annually. This level of timber harvesting would have a negligible effect on the hydrologic regime of the watershed, regardless of how it was conducted. If conducted in accordance with the conservation measures of the HCP, the anticipated level of timber harvesting and road construction would also have a negligible effect on sediment input to the Green River. There is certainly no potential for "massive imbalances in the natural soil-forming and erosion cycles," as suggested in the comment.

NGO 8-21

See General Comment Response 7 and Specific Comment Response NGO 5-5. The Services anticipate no "ecological damage" to the Upper Green River Watershed as a result of the Tacoma Water ITP and HCP.

NGO 8-22

See General Comment Response 7. The HCP would result in a substantial increase in the amount of late-seral coniferous forest on Tacoma Water lands. In the short term, all but 58 acres of the existing mature coniferous forest would be protected from timber harvesting. Over the long term, more than 8,316 acres (roughly 56% of the Covered Lands) would be managed to protect and enhance late-seral forest characteristics. The Services anticipate that this level of habitat protection will satisfy Tacoma Water's obligations under Section 10 of the ESA, and significantly contribute to the recovery of listed species covered by the ITP.

NGO 8-23

See General Comment Response 8.

NGO 8-24

Tacoma Water is proposing no harvest of suitable marbled murrelet nesting habitat under the ITP. Habitat Conservation Measure 3-04W addresses potential impacts to marbled murrelets nesting on lands adjacent to the Covered Lands. In response to comments during public review of the HCP, the measure has been revised so that disturbance protection measures would be implemented around all suitable marbled murrelet nesting habitat that has been determined to be occupied or to have murrelet presence, or that has not been surveyed.

Under the HCP Tacoma Water would manage 52 percent of the Covered Lands for late-seral forest conditions, and maintain no-harvest buffers on several hundred additional acres in the Commercial Zone. Much of this late-seral forest would eventually develop conditions suitable for nesting by marbled murrelets, although it may take more than 50 years for such conditions to appear. This increase in the amount of potential marbled murrelet nesting habitat on the Covered Lands would represent a substantial contribution to the restoration of marbled murrelet habitat in the Upper Green River Watershed.

NGO 8-25

The HCP is consistent with the Final Draft Spotted Owl Recovery Plan and the objectives for the Spotted Owl Special Emphasis Area established in the Upper Green River Watershed by the DNR. Tacoma Water would harvest an estimated 58 acres of mature coniferous forest in the short term,

while protecting and enhancing potential spotted owl habitat on more than 7,700 acres over the long term. The Covered Lands would contribute to the support of the local spotted owl population in the watershed, and the connectivity between populations to the north, south, and east of the watershed.

NGO 8-26

See Specific Comment Responses STA 1-127 through STA 1-134, NGO 5-5, and NGO 8-8. Thinning is not the only conservation measure for northern goshawks in the HCP; it is only one of several measures that would be used. The HCP actually employs four sets of conservation measures that will benefit the northern goshawk. First, all existing forest in the Natural Zone would be protected from timber harvest and other alteration. Second, young forest in the Conservation Zone would be thinned to accelerate the development of large trees, large snags, and small forest openings (all of which are important features of goshawk habitat). Once stands in the Conservation Zone reach 100 years of age, they would be protected from all timber harvesting similar to the Natural Zone. Third, management of the Commercial Zone would include extensive no-harvest riparian buffers, 70-year harvest rotations, and substantially increased rates of live tree, snag, and log retention (compared to standard forest practices). This management of the Commercial Zone is expected to provide nesting and hunting habitat for goshawks throughout the zone. Lastly, Tacoma Water would restrict public access to the Covered Lands and implement seasonal and long-term buffers around active goshawk nests to minimize human disturbance of these key sites. As noted in the comment, goshawks are considered to be sensitive to human disturbance.

NGO 8-27

See Specific Comment Responses STA 1-115 through STA 1-117. The HCP would result in a substantial increase in the amount of potential habitat for the Pacific fisher in the Upper Green River Watershed. Over 8,316 acres of the Covered Lands in the Natural and Conservation Zones would eventually provide closed-canopy forest conditions suitable for fisher, mostly along riparian areas. Thinning in the Conservation Zone would allow trees to achieve larger sizes faster than under natural development and will reduce the period of time a stand is in the stem exclusion stage. These zones will provide a framework of closed-canopy forest that can be used by fisher for movement up and down the Green River in the upper watershed. However, conservation and recovery of the Pacific fisher cannot be achieved on Tacoma Water lands alone. The fisher's home range has been reported to be relatively large, ranging in size from 961 acres to 19,840 acres (Powell and Zielinski 1994).

The eventual recovery of the fisher in the Upper Green River Watershed would require contributions from other landowners, and these would come as a result of the Northwest Forest Plan, the DNR's HCP, and the newly adopted riparian management strategies of the Forest Practices Rules.

NGO 8-28

Thinning in the Conservation Zone would occur primarily in the first few decades of the HCP (before stands reach the age of 100 years). Use of these areas by fisher is expected to be low during that time because of the absence of the species from the watershed. The eventual development of late-seral characteristics in these areas would be beneficial to fisher if they become more numerous in the future. If fisher require young forest for foraging, they would find ample habitat in the Commercial Zone and on other commercial timberlands in the upper watershed.

Windthrow is a prevalent issue in western Washington, and it is known to be increased by some types of timber harvesting. A certain amount of windthrow is desirable, as it contributes to the structural diversity of a forest. Excessive windthrow, however, can delay or retard the development of late-seral forest characteristics. The thinning prescription proposed by Tacoma Water is expected to be sufficiently conservative to avoid excessive windthrow. As a further precaution, HCM 3-01C has been modified and EMM-03 has been added to require monitoring and adaptive management of the commercial thinning program. The method and intensity of thinning would be modified if windthrow is excessive.

NGO 8-29

The Pacific fisher is documented to use low- to mid-elevation forests, avoiding areas susceptible to deep snow (Aubry and Houston 1992). In Washington, fisher have been reported to occur as high as 5,900 feet in elevation, but most sightings (87%) occur below 3,200 feet. These elevation constraints would limit the use of portions of the Upper Green River Watershed, which reaches an elevation of 5,000 feet.

The home ranges of individual fisher are relatively large, ranging from 1.5 to 31 square miles. Fisher prefer dense conifer forests with high structural diversity on the forest floor, and riparian or wetland conditions (Brown 1985; Aubry and Houston 1992; Powell and Zeilinski 1994; Maser 1998). While management conditions are expected to increase the amount of preferred fisher

habitat, the combination of fragmented habitat and the fisher's relatively large home range would further limit the population density in the Upper Green River Watershed.

The Tacoma Water HCP is a prescription-based plan that is not required to monitor population levels of the Covered Species. The impacts to the fisher are measured by changes in habitat conditions. The commenter is reminded that recovery is not one of the issuance criteria for an ITP (see Specific Comment Response NGO 6-4).

NGO 8-30

See General Comment Responses 7 and 8. The HCP is a comprehensive plan for the protection of water quality and habitat on Tacoma Water lands in the Upper Green River Watershed. The Services do not believe that additional restrictions on timber harvesting are necessary to satisfy the requirements for issuance of an ITP.

The lands surrounding Kelly Butte are neither owned nor controlled by Tacoma Water. The Services are not in a position to require that Tacoma Water purchase these lands.

Tacoma Water does own unroaded lands at the bottom of Lester Creek and Sawmill Creek (approximately 2 miles north of Kelly Butte) that are designated Natural Zone and Conservation Zone under the HCP. As specified in HCM 3-01B and 3-01C, no timber harvesting would occur in the Natural Zone, and timber harvesting in the Conservation Zone would occur only to accelerate the development of late-seral forest characteristics.

Tacoma Water also owns portions of three sections along lower Sawmill Creek (roughly 2.5 miles north of Kelly Butte) that are designated as Commercial Zone. These areas are roaded and were clearcut harvested in the early 1990s. Given the target rotation age of 70 years under the HCP, no even-aged harvest is likely to occur in these young forest stands during the next 50 years, regardless of the fact that they are in the Commercial Zone.

Tacoma Water lands along the upper Green River in Sections 21 and 27, Township 20 North, Range 11 East are in a similar condition. They are designated Commercial Zone and were harvested in the early 1990s. Some of this land on moderate terrain may be commercially thinned within 50 years;

however, even-aged harvest would not take place until they are at least 70 years old. A change in designation would have little effect on their management under the HCP for the next 50 years. Tacoma Water does not currently hold the timber rights for these lands, however, and a Natural Zone designation would be in conflict with Tacoma Water's obligation to the holder of those rights.

All Tacoma Water lands along Friday Creek and McCain Creek are designated as Natural Zone or Conservation Zone. No timber harvesting would occur in the portion that is Natural Zone, and little is likely to occur in the portion that is Conservation Zone because it is primarily unforested power line right-of-way.

Tacoma Water lands around Eagle Lake and lands along lower Champion and Rock Creeks are combinations of Natural, Conservation, and Commercial Zones. All lands directly adjacent to the lake are Natural or Conservation Zone, and all lands along the Green River are Natural Zone. The only lands designated as Commercial Zone are those with little or no potential to influence water quality. Cessation of timber harvesting on these lands would not be necessary to achieve the conservation goals of the HCP or to satisfy the ITP issuance criteria of the ESA.

NGO 8-31

The Services believe that the length of new road constructed on Tacoma's lands in accordance with the HCP requirements will be limited and that conservation measures governing construction of new roads on the Covered Lands under Tacoma's HCP are sufficient to minimize increases in sediment delivery and habitat fragmentation. Roads on Tacoma's lands that are not needed by other landowners or for Tacoma's timber harvest program, water quality monitoring, or other administrative purposes will be identified and abandoned within 5 years as stipulated in HCM 3-03J. However, Tacoma is required by legal agreement to provide other landowners access to its lands either on existing roads or through easements to construct new roads across Tacoma's land. Tacoma will require that any new roads constructed on the Covered Lands by other landowners meet the standards stipulated by its HCP. In addition, by working cooperatively with other landowners to develop a watershed-wide transportation plan, Tacoma expects to identify how the existing road network may be used most efficiently, thereby limiting the need for construction of new roads.

See General Comment Response 10 for additional discussion of Tacoma Water's proposed road management and road abandonment program.

NGO 8-32

Tacoma Water does not hold sufficient land in the Upper Green River Watershed to direct any of the state-level Watershed Analyses that are being conducted. Similarly, Tacoma Water and the Services lack the authority to revise state policies and procedures for preparing a Watershed Analysis. Tacoma Water has chosen to address terrestrial habitat issues on its lands through the development of the Forest Land Management Plan and the HCP. For purposes of the ESA, the Services consider this approach to be appropriate.

NGO 8-33

The conservation "standards" for HCPs are not established by management plans on federal lands. Rather, it has been the Services' approach that the Northwest Forest Plan form the backbone of forest species conservation in the Pacific Northwest, and that HCPs be tailored to complement the efforts being carried out on those federal lands. The "standards" for HCPs are clearly spelled out as five issuance criteria in section 10(a)(2)(B) of the Act.

See General Comment Response 11 for a discussion of Tacoma Water's proposed riparian management measures and the strategy for achieving properly functioning riparian habitat. See General Comment Response 7 for a discussion of Tacoma Water's upper watershed management program and its role in commercial logging. See General Comment Response 10 for a discussion of Tacoma Water's proposed road management and road abandonment program.

NGO 8-34

The comment reflects a misunderstanding of the HCP. The Conservation Zone would not be harvested on a 100-year cycle. Stands less than 100 years old in the Conservation Zone would be thinned to accelerate the growth of large trees. Once stands reach 100 years of age, there would be no further harvesting of any kind, except danger tree removal along roads. No thinning would be conducted in stands that are currently over 100 years old in the Conservation Zone.

No harvesting would occur in the Natural Zone for the full term of the HCP, except for minor habitat improvement projects and the removal of danger trees along roads. This restriction applies to all lands in the Natural Zone, including those recently acquired from the USFS. Extension of this harvesting restriction beyond the term of the HCP (i.e., 50 years) would not be appropriate without a comparable extension of the ITP. Since a number of commenters have stated that they feel the proposed 50-year term is too long, the Services are not at this time considering an extension of the term.

The Services do not consider it necessary for Tacoma Water to acquire additional cutting rights from Plum Creek Timber Company as part of the HCP, but nothing in the HCP or ITP would preclude Tacoma Water from pursuing those rights on its own.

NGO 8-35

See General Comment Responses 3, 5, and 7.

NGO 8-36

See General Comment Responses 7, 8 and 10, and Specific Comment Response NGO 5-5.

NGO 8-37

Monitoring and adaptive management are described in detail in HCP Chapter 6. The Services consider the prescribed levels of monitoring and adaptive management appropriate to the anticipated level of incidental and the conservative nature of the HCP.

Contrary to the suggestion in the comment, monitoring is done to verify compliance and facilitate adaptive management, not to respond to unforeseen circumstances. By definition, unforeseen circumstances are those that cannot be anticipated or planned for. As a practical matter, it would be impossible to design a monitoring program to address circumstances of unknown nature and unpredictable occurrence.

NGO 8-38

The primary benefit of the ITP to Tacoma Water will be the management certainty it will provide. As long as Tacoma Water complies with the HCP and other conditions of the IA, it will have

certainty that it can carry out the covered activities without further restrictions under the ESA. Public involvement in the HCP occurs prior to issuance of the ITP, through attendance at public meetings and review of the draft documents. Any requirement to solicit continued public involvement throughout implementation of the HCP would diminish the certainty sought by Tacoma Water, and substantially reduce the incentive for the City of Tacoma to implement the HCP.

NGO 8-39

See General Comment Responses 5 and 7.

Comment Responses to Friends of the Earth (NGO 9)

NGO 9-1

Comment noted.

NGO 9-2

See General Comment Response 30.

NGO 9-3

Discussions with the City of Tacoma and the Services during the development of the HCP were conducted with the knowledge and understanding that issuance criteria (see General Comment Response 3) must ultimately be met before an ITP issued by the Services. One of these issuance criteria requires Tacoma to minimize and mitigate to the maximum extent practicable the impacts of the taking. This requirement does not necessarily prevent Tacoma from continuing to withdraw water from the Green River or from harvesting timber on its lands in the Green River Watershed, it only requires that activities for which Tacoma is seeking incidental take coverage be consistent with all issuance criteria Section 10(a)(2)(B) of the ESA.

The determination as to whether Tacoma's proposed HCP and ITP have met the issuance criteria will be made after the FEIS and Final HCP have been revised based on public input during the original 78-day comment period, and subsequently released for a second 30-day public review period. If at that time issuance criteria are met, the determination to issue a permit will be documented in the Services' decision documents consisting of the ESA Section 10 findings, ESA Section 7 biological opinions, and a NEPA record of decision.

NGO 9-4

See General Comment Response 4.

NGO 9-5

Tacoma Water has requested coverage under Section 10 of the ESA for the effects of its activities on Covered Species. These activities primarily involve management of approximately 10 percent

of the Upper Green River Watershed and withdrawal of water under its First Diversion Water Right claim and its Second Diversion Water Right at the Headworks facilities at RM 61.0. Howard Hanson Dam at RM 64.5 is a federal facility; project operations, including the storage and release of water, are federal activities. Federal activities cannot be covered by a Section 10 ITP of the type being requested by Tacoma Water. Consequently, the Services are only able to evaluate the effects of Tacoma Water's proposed water withdrawal, watershed management, and conservation measure activities.

The effects of Tacoma Water's activities on natural ecosystem habitat functions within the Green River Basin have been identified in HCP Chapter 7. The Services will review the results of Tacoma Water's analyses and consider the degree to which Tacoma Water's habitat acquisition, enhancement, protection and restoration serve to protect Covered Species and habitats.

NGO 9-6

Comment noted. In 1986, Ecology issued the City of Tacoma a water right for 100 cfs following adoption by Ecology of its Green-Duwamish River Basin Instream Resources Protection Program (IRPP). The IRPP establishes instream flows for the Green River measured at the USGS gauges at Palmer (No. 12.1067) and Auburn (No. 12.113000), and subjects future water right holders to regulation at one of the two gauges. After much study, and following a thorough review of protests to the issuance of the water right, the State Pollution Control Hearings Board and Ecology concluded that the water right was consistent with the intent of RCW 90.54.020 (2): *"Allocation of waters among potential uses and users shall be based generally on the securing of the maximum net benefits for the people of the state. Maximum net benefits shall constitute total benefits less costs including opportunities lost."*

Ecology published its IFIM Technical Bulletin entitled *Green River Fish Habitat Analysis Using the Instream Flow Incremental Methodology* in July 1989.

Flow-survival studies have been conducted for salmonids in the Green River. For the results of these studies, see Section 4.0 of the DEIS.

NGO 9-7

We have reviewed the referenced document and will consider the concerns identified by the authors of *Using Science in HCPs* when deliberating whether to issue Tacoma Water an ITP.

NGO 9-8

See General Comment Response 1.

NGO 9-9

Your name has been added to the federal list for final HCP and FEIS distribution. You may also review the final documents on our website at http://www.rl.fws.gov/.

NGO 9-10

Tacoma's System Development Charges are designed to recover 50 percent of the cost of source storage, transmission and treatment to serve new customers. The remainder of these costs is included in rates charged to all customers. Rate structure and System Development Charges structure are the prerogative of the Tacoma Public Utility Board and the Tacoma City Council and are designed to reflect a variety of public policy issues including those raised in this comment.

NGO 9-11

The collection of depreciation costs is a practice carried out by private utilities using a "utility basis" accounting. As a publicly owned utility, Tacoma practices "cash basis" accounting, which does not include the collection of cash for depreciation costs. However, the concern for future ratepayers and responsible financial management is still valid. Tacoma has indicated it concurs with the need to adequately fund capital projects and pay down debt.

NGO 9-12

It is noted that Tacoma's maximum day demand is less than twice average day demand. This appears to be a fairly low peak-to-average day ratio based on the ratio of other utilities. This is driven by Tacoma's significant industrial demand, which tends to negate the peaking effect of residential customers. In fact, most of Tacoma's residential users are affected by higher residential rate blocks since they peak at a similar ratio to residential users in other Washington cities.

NGO 9-13

See General Comment Response 5 and 7, also Specific Comment Responses NGO 5-5 and NGO 10-66.

NGO 9-14

See General Comment Response 5.

Comment Responses to Sierra Club, Cascade Chapter (NGO 10)

NGO 10-1

Comment noted.

NGO 10-2

The destruction of habitat that harms threatened and endangered species, otherwise referred to as "take," is prohibited by Section 9 of the ESA. Congress amended Section 10 of the ESA in 1982 to authorize the Services to issue permits to non-federal entities authorizing the "take" of listed species. The take authorized must be "incidental" to otherwise lawful activities and conducted in accordance with an approved HCP. An ITP is issued if an HCP meets specific criteria set forth in Section 10. For species covered by an ITP, the accompanying HCP must: minimize and mitigate the impacts of the proposed take to the maximum extent practicable, and not appreciably reduce the likelihood of survival and recovery of the species in the wild. Therefore, the comment that take should not be allowed as part of this HCP appears to reflect a criticism of the mechanism created by Congress in Section 10 of the ESA to authorize incidental take of listed species and the legal standards for such permits. The Services do not have the authority to change amendments to the ESA that Congress has authorized and, therefore, can only work within the framework of the Act as amended by Congress.

NGO 10-3

Given the importance of non-federal land in the conservation of threatened and endangered species, the Services recognized the need to provide adequate incentives for non-federal landowners to factor endangered species conservation into their day-to-day land management activities. Economic and regulatory certainty regarding the overall cost of species conservation and mitigation is of great concern to non-federal property owners. To alleviate this concern and provide meaningful conservation for listed species, the Services believe that it is appropriate to provide HCP Applicants the incentive of regulatory certainty provided the affected species are adequately covered by a properly functioning HCP. This incentive is captured in the "No Surprises" rule (63 FR 8859). Summarized, the rule states that private landowners are assured that if "unforeseen circumstances" arise, the Services will not require the commitment of additional land, water, financial

compensation, or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed to in the HCP without the consent of the permittee. The Services also believe that in order to provide sufficient incentives for the private sector to participate in the development of long-term conservation plans, adequate assurances that a Section 10(a)(1)(B) permit can be issued for the life of a project must be made to non-federal entities that choose to develop HCPs.

NGO 10-4 through NGO 10-6

Refer to General Comment Response 1.

NGO 10-7

Adaptive management for Covered Wildlife Species is generally unnecessary because of the extremely conservative nature of the HCP. Only 21 wildlife species would be covered by the ITP, and the level of incidental take is anticipated to be minimal for all 21 species. As mitigation, Tacoma Water would make substantial contributions to the long-term conservation of these species by dedicating roughly 74 percent of the Covered Lands (52% of which are upland forest) to habitat reserves. Natural habitat-forming processes would be allowed to occur in these zones, with limited amounts of management for habitat enhancement. The remaining 26 percent of the Covered Lands would be managed with low levels of commercial timber harvest, and high levels of residual tree, snag, and log retention. The only area of minor uncertainty relative to long-term conservation benefit is the snag creation program in the Commercial and Conservation Zones. Consequently, this is the focus of adaptive management in the HCP (see EMM-01).

Adaptive management for Covered Aquatic Species is described in General Comment Response 26.

NGO 10-8

Tacoma wishes to insure that its actions on the Green River are in compliance with the ESA. If it operates in accordance with an approved HCP, then this requirement would be met. Without such assurance, Tacoma has stated that it cannot afford to commit the significant resources that are required for the water supply and environmental improvements proposed in this HCP.

Although the protection provided to Tacoma by an HCP is significant, it is not all-encompassing. The Services still have the ability to compel changes in operation by Tacoma in the event of a determination of jeopardy to endangered species as a result of that operation. In addition, Tacoma has historically modified its operations at the request of resource agencies to reduce the use of water from its existing water rights for resource protection. This has happened numerous times in recent years.

NGO 10-9

See Specific Comment Response NGO 10-7. Effectiveness Monitoring Measure EMM-01 requires that data on snag recruitment and persistence be collected on the Covered Lands, and that adjustments be made to the snag creation program if necessary to provide for the needs of cavity-nesting wildlife species covered by the ITP.

Adaptive management for Covered Aquatic Species is described in General Comment Response 26.

NGO 10-10

The levels of adaptive management required under the HCP are anticipated to be both adequate to meet the issuance criteria of ESA Section 10, and appropriate to the specific environmental and economic conditions of the Green River. Section 10 is intended to provide regulatory assurances to landowners that meet the specified issuance criteria and provide mitigation appropriate to the anticipated level of incidental take. If there were no limits on the amount of adaptive management required of an ITP holder, there would essentially be no regulatory assurances. Without those assurances, a landowner would have little or no incentive to pursue an ITP and prepare an HCP.

See General Comment Response 26 for a discussion of adaptive management and protection of aquatic species, and General Comment Response 17 for discussion of instream flows and aquatic resource protection.

NGO 10-11

We are aware of the referenced documents and consider the guidelines when developing or reviewing endangered species conservation efforts. See General Comment Response 26 regarding the adaptive management provisions of Tacoma Water's HCP.

NGO 10-12

The compliance monitoring measures are designed to provide us with confirmation that the conservation measures have been implemented as specified in the HCP. Tacoma Water's obligations to comply with the instream flow measures identified in HCMs 1-01 and 1-02, and our response in the event of non-compliance are identified in the IA. Should Tacoma Water fail to comply with the terms of the conservation measures, the Services' responses are outlined in IA Paragraphs 6.2, Permit Suspension or Revocation, 6.3, Relinquishment of the Permit, and 14.0, Remedies, Enforcement, and Dispute Resolution.

NGO 10-13

The conservation measure contingencies vary between measures depending on the Proposed Action and anticipated likelihood of success of the original measure. Wood placed under HCM 1-05 would be sized according to the intended function and channel dimensions. As noted in HCM 1-05, Tacoma Headworks Large Woody Debris/Rootwad Placement, "Structures that are deemed non-functional as a result of high flows would be modified or replaced by Tacoma as needed within the first 5 years following construction." This commitment would ensure that if wood placed initially proves to be too small to remain stable for at least 5 years, then the design would be modified such that structures are of a sufficient size to remain stable. Once it has been determined that the structure design is sufficient to remain stable and functional for at least 5 years, we do not anticipate that structures would need to be replaced more than once over the remaining term of the HCP.

NGO 10-14

The wildlife strategies in the HCP were designed to minimize the need for effectiveness monitoring. The strategy has three major components: 1) maintenance and enhancement of native late-seral coniferous forest on portions of the Covered Lands (the Natural and Conservation Zones) with minimal human intervention; 2) maintenance of late-seral coniferous forest habitat elements in intensively managed portions of the Covered Lands (the Commercial Zone) in a manner consistent with commercial timber production; and 3) minimization of impacts of human activity on the Covered Lands by observing seasonal and long-term buffers around sensitive areas such as dens, nests and key foraging areas. The ability of late-seral coniferous forest to support species native to that type of habitat is somewhat axiomatic. If effectiveness monitoring is necessary to demonstrate that unmanaged forest is capable of supporting native wildlife, such monitoring is beyond the scope of the Tacoma Water HCP. The effectiveness of leaving residual live trees, snags and logs in the

Commercial Zone is subject to debate, and effectiveness monitoring has been included in the HCP specifically to address that issue (see EMM-01). Seasonal and long-term disturbance buffers around nests and dens also warrant monitoring, and that monitoring would occur under EMM-02. The objective of disturbance buffers, as stated in EMM-02, is to reduce the potential for human activity to disrupt the specific wildlife activities occurring in the buffered areas. The monitoring required under EMM-02 would evaluate whether that objective is being met.

See General Comment Response 25 for further discussion of quantifiable data and resource objectives in the HCP. In response to the specific request for quantifiable objectives for gravel nourishment, note that Type 2 conservation measures, such as HCM 2-09, Mainstem Gravel Nourishment, consist of contribution of funds and/or implementation of measures designed to offset or compensate for impacts resulting from non-Tacoma actions. Habitat Conservation Measure 2-09 is designed to partially restore gravel transport functions in the Middle and Lower Green River caused by the USACE's Howard Hanson Dam. Under HCM 2-09, up to 3,900 cubic yards of gravel will annually be placed downstream of Howard Hanson Dam. If research monitoring indicates that an increased rate of gravel nourishment would be beneficial, funds for additional gravel nourishment must come from non-Tacoma sources.

NGO 10-15

At this time, a formal description of Properly Functioning Conditions (PFC) has not been established for fish species to be covered by Tacoma Water's application for incidental take coverage. The function of natural riverine processes in the Green River watershed is discussed in HCP subsection 4.5.3, Current Processes Affecting Fish Habitat and Populations. Conservation measures described in Chapter 5 of the HCP were designed to contribute to restoring natural processes in view of existing and expected future conditions of the Green River basin (for example, continued flood control operations by the USACE at Howard Hanson Dam). The conservation measures are expected to contribute to restoring properly functioning conditions in the basin.

NGO 10-16

Tacoma Water has committed to several conservation measures associated with facilities operated by other parties (for example, USACE operation of Howard Hanson Dam). Tacoma Water has also committed to conservation measures where resource agencies and the Muckleshoot Indian Tribe have been provided the opportunity to identify and recommend adaptive management options with

the approval of the Services (for example, Howard Hanson Dam springtime storage and release operations). For conservation measures where agencies and the Muckleshoot Indian Tribe are responsible for adaptively managing a resource, Tacoma Water has committed to funding research to provide them with feedback on the results of their actions.

The research funding measure RFM-02A, Monitor Effect of Flow Management Strategies on Side Channel Habitats, is an example of a measure designed to provide the Green River Flow Management Committee with feedback on the results of its flow management recommendations.

NGO 10-17

Many of the research funding measures in HCP Chapter 6 (for example, RFM-02, A-E, Flow Management), provide the opportunity for testing of explicit assumptions and adaptively managing the resource in view of the results of experimentation. For instance, freshets are a short-term release of high flow designed to initiate movement and increase the survival of downstream migrating salmonid smolts. The release of freshets in the Green River, however, may allow adult steelhead to spawn along the channel margins at high flow levels where the eggs may be dewatered when the flow drops following the freshet. Research conducted under RFM 2-02 would allow the Green River Flow Management Committee to evaluate both beneficial and detrimental effects of freshets and to evaluate their use as a management tool to benefit Green River resources.

NGO 10-18

Tacoma Water has requested coverage under Section 10 of the ESA for the effects of its activities on Covered Species. These activities primarily involve management of approximately 10 percent of the Upper Green River Watershed and withdrawal of water at its Headworks facilities at RM 61.0. Howard Hanson Dam at RM 64.5 is a federal facility; project operations, including the storage and release of water and the interception of sediment and woody debris, are federal activities. Tacoma Water's conservation measures include the opportunity to restore anadromous fish runs above Howard Hanson Dam and the commitment to gravel nourishment and woody debris transport measures that would contribute to restoring natural ecosystem functions of the Green River.

NGO 10-19

The purpose of an HCP is to minimize and mitigate the impacts of any incidental taking authorized by a Section 10 permit, and to ensure that issuance of the permit does not appreciably reduce the likelihood of the survival and recovery of the species in the wild. An HCP is not required to recover listed species or restore habitat damaged by past actions, although many HCPs, including Tacoma Water's, include measures specifically designed to rehabilitate habitat that is not currently considered to be functioning properly.

NGO 10-20 and NGO 10-21

As the writer notes, many of the conservation measures in the HCP are reliant on successful implementation of the Additional Water Storage Project by the USACE. It is also noted that USACE has not completed its Section 7 consultations with NMFS and the USFWS. However, this consultation is nearing completion and the findings of the Biological Opinion by the Services regarding the Howard Hanson Dam Additional Water Storage Project are not in conflict with the proposals in Tacoma's HCP.

If the Additional Water Storage Project by the USACE did not go ahead, then Tacoma would still have the ability to independently implement some of the provisions of its HCP. However, it is more likely that this HCP would have to be developed to reflect a significantly scaled-down effort by Tacoma with regard to Green River water supply operations.

NGO 10-22

See General Comment Response 17 for a discussion of increasing instream flows to provide additional protection for fish, and General Comment Response 26 for a discussion of the adaptive management provisions of Tacoma Water's HCP.

See General Comment Response 30, which explains how the cumulative effects analysis of the DEIS was expanded to include the Additional Water Storage Project and Second Supply Project.

NGO 10-23

See changed circumstances text in the HCP, page 3-9.

NGO 10-24

The City of Tacoma will not own or operate the fish restoration facility and is not seeking ESA coverage for its construction and operation. As described in HCM 2-05, the transportation and release of juvenile salmonids from the fish restoration facility is contingent on regulatory approval of the facility and its intended uses, and obtaining the necessary water rights and permits for the facility. The Muckleshoot Indian Tribe will own and operate the facility; if necessary, permits to comply with the ESA may be issued to the Muckleshoot Indian Tribe and will be sought as a process separate from Tacoma Water's HCP. Operation of the fish restoration facility is not required to provide the opportunity to reestablish anadromous fish production in the upper watershed. If the fish restoration facility cannot be permitted or is deemed to be infeasible, the Muckleshoot Indian Tribe will use the available funds for fisheries enhancement in the Green/Duwamish River system.

NGO 10-25

If the Additional Water Storage Project at Howard Hanson Dam is not constructed, it is still possible that Tacoma would elect to fully implement the HCP as presented in this document. However, it seems more likely that the Second Supply Project would be significantly restructured in the absence of the Howard Hanson Dam Additional Water Storage Project resulting in the need to redevelop an HCP to address Tacoma's revised Green River program.

NGO 10-26

If the Second Diversion Water Right is not implemented, then it is doubtful that the HCP proposed at this time will be implemented. However, the need to address the requirements of ESA will most likely result in Tacoma developing an alternative strategy to ESA compliance other than this proposed HCP.

NGO 10-27

Contrary to the commenters' assertion, Tacoma Water's withdrawals under its First Diversion Water Right claim and Second Diversion Water Right will have little effect on high flows in the Green River. High flows in the Green River are controlled by the USACE's operation of Howard Hanson Dam for flood control, which is an activity separate from Tacoma's water withdrawals.

As noted in HCM 1-01 and HCM 1-02, Tacoma Water's HCP provides for reductions in water withdrawal during periods of low flow. These constraints reduce Tacoma's withdrawals from 213

cfs to an average annual withdrawal of approximately 180 cfs. Although Tacoma Water is proposing to withdraw up to 213 cfs on an instantaneous basis, Tacoma's average withdrawal of 180 cfs represents approximately 19 percent of the average flow of the Green River at Palmer and about 14 percent of the average daily flow of the Green River at Auburn.

The effects of Tacoma Water's withdrawals and conservation measures are described in HCP Chapter 7. The analyses in the HCP address the effects of both the First Diversion Water Right claim and the Second Diversion Water Right. Analyses of the effects of the First Diversion Water Right claim were developed separate from the effects of the Second Diversion Water Right under the No Action Alternative in the DEIS. In order for the Services to determine if the proposed conservation measures provide adequate resource protection, the Services requested that the HCP analyses evaluate the full effects of the proposed HCP action. The HCP analyses assume that water withdrawals are the maximum amount available under the HCP, even though full withdrawal may not occur for several years after the Second Supply Project is constructed.

NGO 10-28

The IFIM is a tool used in determining instream flow requirements and, as such, has inherent strengths and weaknesses. The Instream Flow Incremental Methodology remains the method generally used by Ecology and the WDFW (Washington Department of Ecology 1998), as well as the Services, to assess instream flow requirements. Ecology used the IFIM in its analyses of Green River instream flow requirements in 1989, and continues to use the method to assess instream flow requirements in other river basins in Washington State. In response to comments received during the scoping phase of the Additional Water Storage Project, Tacoma Water and the USACE conducted additional studies of juvenile salmon migration, side channel connectivity, and steelhead incubation in the Green River to supplement the IFIM study conducted by Ecology. Groundwater recharge is not expected to be affected by Tacoma's HCP since baseflow will be slightly increased during drought conditions and flood flows would not be affected by Tacoma's actions.

NGO 10-29

A discussion of shared risk between water supply and fisheries is provided in HCP Appendix E, Tacoma Water Response to Six Principles of Project Operation and Design for the Howard Hanson Dam Additional Water Storage Project.

NGO 10-30

See General Comment Response 27.

NGO 10-31

A description of the North Fork wellfields is provided in HCP subsection 4.2.3. Habitat Conservation Measure 1-01 (see HCP subsection 5.1.1) describes proposed resource protection measures and the effect of Tacoma's water withdrawals on aquatic resources in the North Fork Green River are described in HCP Chapter 7 under various upper watershed subheadings (for example, HCP subsection 7.1.3.1 Potential Effects of Covered Activities and Conservation Measures on Chinook Spawning and Incubation in the Upper Watershed).

NGO 10-32

See General Comment Response 28.

NGO 10-33

We have addressed concerns raised by the Center for Environmental Law and Policy in response to its comment letter (NGO 7). The Sierra Club commenter raises an additional specific concern regarding the apparent "lack of insects in the various sub-basins of the Green-Duwamish Watershed." We are unaware that any specific Green River sub-basin lacks insects and, therefore, we cannot respond in a more complete manner without additional information. If the Sierra Club has such information, we encourage the organization to provide it to the Services and Tacoma Water for review. During our evaluation of Tacoma Water's application for an ITP, we will evaluate both direct and indirect effects of the proposed actions on Covered Species.

NGO 10-34

Comment noted. Anadromous fish passage to the Green River upstream of RM 61 was blocked by the construction of the Tacoma Water Diversion Dam in 1911. Anadromous fish were not permitted in the watershed until October 1982, when the Muckleshoot Indian Tribe and Washington Department of Game began planting steelhead juveniles into the Upper Green River Watershed. In March 1983, the Washington Department of Fisheries began planting juvenile coho into the upper watershed, and in March, 1987, the Muckleshoot Indian Tribe began planting chinook juveniles in the upper watershed. Beginning in 1992, wild winter adult steelhead trapped at the Tacoma

Diversion Dam have been transported into the upper watershed and released into the Green River upstream of Howard Hanson Dam to spawn. The spawning and rearing success of these fish is unknown, but with implementation of the HCP, Tacoma Water would be dedicating considerable resources to monitoring the success of the adult salmon and steelhead reintroduction program. Operation of the downstream fish passage facility at Howard Hanson Dam is expected to greatly improve the survival of downstream migrating juvenile fish as well as kelt steelhead.

NGO 10-35

A discussion of existing downstream fish passage conditions at Howard Hanson Dam is provided as part of the supporting rationale for HCM 2-01, Howard Hanson Dam Downstream Fish Passage Facility (HCP subsection 5.2.1). As noted in that subsection:

> "Currently, juvenile salmon and steelhead migrating from the upper Green River to lower river rearing areas or migrating to salt water must pass through one of two HHD outlets (the flood control tunnel or a 48-inch-diameter bypass pipe). Two large radial gates regulate the flood control tunnel (1,035 feet) with a capacity of over 10,000 cfs. At flows less than 500 cfs, the 48-inch bypass pipe is used (1,069 feet). Refill of the project typically occurs between early April through June when the pool is filled from low pool (1,070 feet) to the full conservation pool (1,141 feet; plus 3 to 5 feet for debris removal). Spring refill coincides with the main outmigration period of juvenile salmonids. As the pool fills, the outlets are submerged to depths of 35 to 112 feet. As inflow to the reservoir recedes, outflow from the dam is routed to the bypass pipe (flows less than 500 cfs)."
>
> "Beginning in 1982, juvenile coho and chinook salmon and steelhead trout have been re-introduced into the upper watershed as a means to assess the ability of the existing configuration and operating plan of HHD to pass juvenile fish. Current annual survival of juvenile salmon and steelhead migrating through HHD outlets is estimated between 5 and 25 percent based on a fish passage model and on-site monitoring data (Dilley and Wunderlich 1992, 1993). The low survival rate is primarily a function of two factors: the spring refill of the reservoir submerging the dam outlets and the low survival of juveniles as they pass through the outlets. Juvenile fish require a near surface-outlet with a high discharge capacity outlet (exact volumes depend on site conditions). Therefore, at a time when fish need high flows and a shallow outlet, the project is reducing outflow (refill) and

creating a deeper outlet (from 35 to 112 feet deep). During outmigration fish may not find or be willing to use outlets that are deeply submerged. Fish that are delayed or entrapped beyond a certain time may not migrate to salt water and may not contribute to the returning adult population. Fish that sound (dive) to reach the outlet pipe experience high mortality from impacts at sharp bends or turns within the bypass. Direct mortality in the bypass pipe can range from 1 percent to 100 percent depending on the amount of flow, water temperature, pool elevation, and time of year."

"The new downstream fish passage facility is designed to provide much higher success of juvenile outmigration and to accommodate the higher water levels and changes in refill timing under the AWS project Phase I."

NGO 10-36

See General Comment Response 22 for a discussion of the performance of trap-and-haul fish passage facilities and the rationale for selecting a trap-and-haul program to restore adult anadromous fish access to the Upper Green River Watershed.

NGO 10-37

Tacoma Water has indicated it does not believe that reintroduction of anadromous fish to the upper watershed poses a risk to drinking water quality and public health at the numbers that have been discussed to date. This would include the introduction of up to 6,500 adult coho and 2,300 adult chinook. This level would be reached over a period of years allowing adequate opportunities to assess water quality on an ongoing basis. Tacoma Water has committed to monitoring the effects of fish passage on drinking water quality as part of its surface water treatment operations. If continued monitoring confirms that reintroduction of anadromous fish does not pose a risk to public health, no further action would be taken. If, to adequately protect drinking water quality, it becomes necessary to limit the biomass of adult fish transported into the upper watershed, Tacoma Water would coordinate with the NMFS, USFWS, and the fisheries managers before instituting measures to decrease fish passage. As part of the coordination effort, Tacoma would select one or more independent experts to evaluate available options. The independent expert would submit a report to the City, fisheries managers, and public health officials with recommendations as to the level of fish passage that can occur without posing a risk to drinking water quality and public health.

NGO 10-38

The 64 percent survival estimate for downstream fish passage through the Howard Hanson Dam Project was developed by the USACE during analysis of the Additional Water Storage Project (U.S. Army Corps of Engineers 1998). The passage estimate includes both reservoir and dam passage and applies only to subyearling chinook that move downstream during the early spring. Juvenile salmonids that move downstream at larger sizes, such as yearling coho and steelhead and chinook salmon, are expected to pass downstream with higher survival rates. Assuming a 64 percent rate of passage survival, chinook salmon have a fair to poor chance of establishing self-sustaining runs above Howard Hanson Dam (U.S. Army Corps of Engineers 1998).

The primary source of injury is assumed to be associated with downstream passage through the Howard Hanson Reservoir. Although some juvenile chinook populations successfully pass downstream through large waterbodies (for example, Lake Washington), chinook populations on other river systems appear unable to develop self-sustaining runs due to losses during reservoir passage. Juvenile salmonids passing downstream through Howard Hanson Reservoir may experience higher survival rates than modeled due to the lack of large predator populations. However, if juvenile chinook survival rates are much lower than 64 percent, it is unlikely that self-sustaining, naturally reproducing runs will be established in the Upper Green River Watershed.

Once the juvenile salmonids enter the forebay area of the Howard Hanson Reservoir, the proposed downstream fish passage facility is expected to successfully pass the fish downstream of Howard Hanson Dam.

NGO 10-39

See Specific Comment Response NGO 10-38.

NGO 10-40

The commenter suggests that Tacoma attempts to separate the Additional Water Storage Project from the HCP. This is simply a recognition of the areas where Tacoma has the ability to exert control and has responsibility versus the areas where control and responsibility rest with USACE. Tacoma and USACE have coordinated extensively on the linkage between Tacoma's Second Supply Project and the Additional Water Storage Project at Howard Hanson Dam. The Additional Water

Storage Project is currently completing review of a biological assessment by the USFWS and the NMFS. The resultant Biological Opinion will provide the public a sound assessment regarding the effectiveness of project implementation. In the event that the Additional Water Storage Project was not to go ahead, Tacoma's HCP would require extensive modifications.

See General Comment Response 30, which explains how the cumulative effects analysis of the DEIS was expanded to include the Additional Water Storage Project and Second Supply Project.

NGO 10-41

See Specific Comment Response NGO 10-24, and General Comment Response 30.

NGO 10-42

See Specific Comment Response NGO 10-24.

NGO 10-43

In the event that the proposed HCP cannot be approved by the Services, then Tacoma would need to reconsider its future plans for expanded water supply from the Green River. In the event that no further diversions from the Green River were possible, the commenter is correct that Tacoma could still seek an ITP to cover its existing operations on the Green River. However, this was not considered to be a viable alternative to the proposed HCP because it did not meet the purposes of the proposed HCP and associated projects, i.e., the regional supply of water in Tacoma, South King County, and the Seattle service area.

NGO 10-44

The commenter is correct that page 9-2 line 38 overstates Tacoma's reliance on the Second Diversion Water Right. It should indicate that this project or other projects, some of smaller size, will need to begin to come on line shortly after 2001. Tacoma does have the ability to develop numerous small sources of supply. These small sources are an integral part of water supply programs in conjunction with the Second Diversion Water Right on the Green River.

Tacoma currently has and continues to develop contracts with adjoining water purveyors for the delivery of water. As the largest water supplier in Pierce County, Tacoma has the ability to support

adjoining utilities and has provided service outside of the City limits of Tacoma for many years. This provision of water is at a rate 20 percent higher than inside City rates, which reflects the additional cost to provide service outside of the City limits as well as the cost of City support services which Tacoma ratepayers pay through taxes. Tacoma maintains that the sale of water outside the City limits and on a wholesale basis is not a money-making venture but an extension of a public service.

NGO 10-45

The storage of additional water for fisheries purposes under Section 1135 of the Clean Water Act at Howard Hanson Dam is a project sponsored by the City of Tacoma, as is the Additional Water Storage Project at Howard Hanson Dam. The quality of fish passage and environmental resource protection and restoration included in both of these projects as a result of local sponsor participation may not be maintained without this local financial involvement. In its cooperative efforts with local governments and other water utilities to meet water supply needs in the Central Puget Sound area, Tacoma seeks to meet a public need for additional water supply as identified by growth projections for the Central Puget Sound area under the State's Growth Management Act. Tacoma is the major water supplier in Pierce County and South King County and thus better able to serve in a leadership and coordinating role than smaller utilities in the region.

NGO 10-46

We are unable to provide a specific response to this comment since we are unsure of the substantive concern. However, please refer to Specific Comment Responses NGO 7-17 and NGO 7-18 for a response to the Center for Environmental Law and Policy concern regarding the range and scope of alternatives.

NGO 10-47

In the proposed HCP, Tacoma has presented the best plan that it believes is possible given the limitations on resources under which it operates. If the Services determine that this HCP cannot be issued then it may be necessary for Tacoma to revise its plans on the Green River and to simply seek to revise the HCP to protect its existing first diversion water right operation.

NGO 10-48

The alternatives in the HCP and the NEPA review are often different in scope because these analyses are aimed at different objectives. Under the HCP, the Applicant must analyze possible alternatives to *implementation of an HCP*, including other planning options aimed at take avoidance. However, under NEPA, the Services must analyze alternatives to the proposed agency action, which is *issuance of an ITP*, including no permit issuance, or issuance of other permits that would meet the Applicant's proposed purpose and need.

While it is true that the USACE has the authority to store water for fish, this federal storage "action" does not alleviate Tacoma Water's requirement to comply with the ESA while withdrawing water. It is important to note that storage and withdrawal are two separate actions performed by a federal agency governed under Section 7 of the ESA and private entity (Tacoma Water) governed under Section 10 of the ESA, respectively. The USACE approval to store water does not extend so far as to allow Tacoma Water to potentially harm fish resources through its independent water withdrawal actions. Consequently, it was necessary for Tacoma to embark on a Section 10 compliance independent of the USACE's actions.

We are unsure of the specific concerns related to the adequacy of the alternatives review and the range of alternatives. However, please refer to Specific Comment Response NGO 7-17 for further information.

NGO 10-49

See General Comment Response 4 and DEIS subsection 2.3. Tacoma Water has made application to the USFWS and NMFS for two ITPs, one from each agency. The Services' Proposed Action, therefore, is issuance of ITPs. The purpose and need of the Proposed Action as stated in subsection 1.2 of the DEIS is to respond to Tacoma Water's permit application in a manner that: 1) provides protection and conservation to listed and proposed species and their habitats to the extent intended under §10(a)(1)(b) of the Act; and; 2) allows Tacoma Water to fulfill its water supply obligations in a practical manner. The environmental review process must focus on this Proposed Action, the stated purpose and need for the action, and alternatives to the Proposed Action that will fulfill the purpose and need. Alternatives, such as water conservation and reuse alone, would not fulfill the purpose and need to supply the Tacoma Water service area, and are beyond the scope of this DEIS and need not be analyzed.

It should be noted that Tacoma does have an aggressive water conservation program, which, as described in subsection 2.2.1.1, has resulted in water savings of nearly 18 million gallons per day since 1990. While water conservation and reuse would not result in adequate water supplies for the Tacoma Service Area, these programs are integral components of each water withdrawal alternative. Furthermore, if an ITP is not issued to Tacoma Water, this water conservation program would continue to be implemented.

Tacoma and the Services do recognize the public interest surrounding the selection of a source of additional water in response to growing demands. It is for this reason that additional information was included in subsections 2.2.1 and 2.3 of the DEIS regarding the decision-making process that Tacoma Water went through in determining its management direction for obtaining additional water, and prior to initiating discussions with the Services regarding ITPs. This information was included so that the public would understand the rationale and considerations involved in the local decision-making process that led to Tacoma's request for an ITP.

NGO 10-50

See General Comment Response 22 for a discussion of the performance of trap-and-haul fish passage facilities and the rationale for selecting a trap-and-haul program to restore adult anadromous fish access to the Upper Green River Watershed.

NGO 10-51

Refer to Specific Comment Responses prepared for the Pacific Crest Biodiversity Project letter, NGO 8.

NGO 10-52

Comment noted.

NGO 10-53

Comment noted. Although Tacoma Water controls access into the closed portion of the Upper Green River Watershed, it owns only 10 percent of the land in the upper watershed. Agreements with the other landowners allow Tacoma Water staff to monitor activities that have the potential to degrade water quality, such as road building and logging. Tacoma Water has been able to meet federal and

state municipal water quality requirements for unfiltered surface water supplies in large part because of its watershed access control policies. Public access is available to the upper watershed from 2 miles east of the former townsite of Lester at Friday Creek gate east to the crest of the Cascade Mountains. Lands included in this part of the watershed belong to the USFS, DNR, Plum Creek Timber Company, and the City of Tacoma, although no camping is allowed within 200 feet of the Green River or any perennial stream.

NGO 10-54

See Specific Comment Response NGO 10-53. There is access to the trails the commenter mentions from the south, on USFS roads that are open to public access.

NGO 10-55

Comment noted. Refer to subsections 3.10 (Recreation) and 3.11 (Visual Resources) for a baseline description; 4.2.8 (Recreation) and 4.2.9 (Visual Resources) for an analysis of the impacts from water withdrawal; and 4.3.8 (Recreation) and 4.3.9 for an analysis of the impacts from upper watershed management. Also see General Comment Responses 13, 17, 19, and 21.

NGO 10-56

Comment noted. See Specific Comment Response NGO 10-55.

NGO 10-57

Comment noted. See Specific Comment Response NGO 10-55.

NGO 10-58

See General Comment Response 3.

NGO 10-59

See Specific Comment Response NGO 10-55.

NGO 10-60

See Specific Comment Response NGO 10-55.

NGO 10-61

See Specific Comment Response NGO 10-55.

NGO 10-62

Comment noted.

NGO 10-63

See General Comment Response 21.

NGO 10-64

The establishment of water rates is the responsibility of the local government's operating water utilities. Tacoma's water rate structure currently includes an inclining block rate structure and a summer surcharge to increase the rates during high demand periods. Tacoma has indicated that while some additional savings of water might be provided through raising rates to higher levels at the upper ends of water use, it is doubtful that the 40 percent savings indicated could be attained. In addition, a large percentage of water utility customers do not support raising water rates above the cost of service.

NGO 10-65

See General Comment Response 19.

NGO 10-66

The information in Chapter 8 is provided to comply with ESA Section 10(a)(2)(B)(iii), which requires that an Applicant for an ITP "ensure that adequate funding for the plan (HCP) will be provided." Only by identifying the costs of the mitigation measures can Tacoma Water demonstrate that adequate funding will exist to carry out those measures. The relationship between the costs of mitigation and the revenues to be generated under the ITP is only relevant in demonstrating that sufficient funding will be available to implement the HCP. The Services do not have the regulatory authority to determine how much revenue Tacoma Water will generate from the sale of water and/or timber under the ITP.

NGO 10-67

See Specific Comment Response 10-66. Note also that the majority of the cost of the upstream fish passage conservation measure is associated with passing fish above the USACE's 238-foot high Howard Hanson Dam.

NGO 10-68

See Specific Comment Response 10-66. Note also that Tacoma Water is contributing funding to a variety of conservation measures, including downstream fish passage at Howard Hanson Dam and gravel nourishment as described in HCP Table 8-1, Estimated Costs of habitat conservation measures identified in Tacoma's Green River Habitat Conservation Plan. The joint funding estimate described in HCP Table 8-1 represents a cost-share arrangement between Tacoma, the USACE, and other potential partners

.

NGO 10-69

The estimated costs for wildlife and riparian habitat conservation measures stated in HCP Table 8-1 are accurate, although they may require some explanation. The costs of HCM 3-01 include opportunity costs associated with leaving merchantable timber standing in reserves; opportunity costs of extending rotations outside reserves; creating snags; slash disposal; reforestation; and management costs associated with delineating, working around, and monitoring special management areas. The estimate of $2,129,000 is accurate.

Estimated costs for the upland forest management measures described above are primarily the lost value resulting from leaving merchantable timber in riparian buffers (HCMs 3-01, 3-02, 3-03, 3-04). They include the value of unharvestable timber in riparian areas to comply with current Forest Practices Rules, as well as the cost of unharvestable timber in riparian areas to comply with the requirements of the HCP. The HCP requirements are considerably greater than current Forest Practices Rules, and would result in the retention of at least double the timber volume. A conservative estimate of the costs attributable to complying with HCM 3-02 alone would be $1,500,000 (as opposed to the $3,000,000 shown in Table 8-1, which includes the value associated with foregoing timber harvest to comply with both the Forest Practices Rules and HCM 3-02).

Road construction and maintenance measures (HCM 3-03) in the HCP stem from Watershed Analyses prescriptions, but inclusion of those prescriptions as commitments in the HCP represents an increased financial liability for Tacoma Water. Therefore it is understandable and acceptable to include all such costs ($1,714,000) in the analysis of the HCP.

The costs of species-specific management measures (HCM 3-04) are also largely opportunity costs associated with leaving timber standing in buffers, and are based on assumptions as to how many buffers could be required. The estimate of $741,000 could be low if all the Covered Species were encountered in the watershed and the maximum number of buffers allowed for in the HCP were required.

With removal of the value of unharvested timber in riparian buffers attributable to current forest practices, the total estimate for all management measures (HCM 3) would be $6,084,000. Given that the purpose for presenting cost estimates in the HCP is to ensure adequate funding for the conservation measures (see Specific Comment Response NGO 10-66), it is appropriate to include all possible costs in the estimate.

NGO 10-70

The decision to collect 50 percent of the costs of storage, source, transmission, and treatment in Tacoma's System Development Charge was made by Tacoma's Public Utility Board and City Council. It is a reflection of a City policy that recognizes that new customers should pay a significant portion of new water supply but that there is also an obligation for existing customers to pay for a portion of those costs.

NGO 10-71

See Specific Comment Response NGO 9-11.

NGO 10-72

Tacoma must pay the cost of the HCP by whatever resources are available. The Services must reach a finding that adequate funding is available to implement the HCP measures, but the Services cannot direct an Applicant where to obtain the funding.

NGO 10-73

See Specific Comment Response NGO 10-64.

NGO 10-74

Comment noted.

NGO 10-75

Contrary to the commenter's assertion, an estimate of the expected use of the North Fork Wellfield is provided in HCP subsection 4.2.3, Table 4-6, Summary of Average Daily Flow In The North Fork Green River And Expected Well Demand From The North Fork Wellfield By Month.

NGO 10-76

A description of the North Fork wellfields is provided in HCP subsection 4.2.3. Habitat Conservation Measure 1-01 (see HCP subsection 5.1.1) describes proposed resource protection measures and the effect of Tacoma's water withdrawals on aquatic resources in the North Fork Green River as described in HCP Chapter 7 under various upper watershed subheadings (for example, HCP subsection 7.1.3.1 Potential Effects of Covered Activities and Conservation Measures on Chinook Spawning and Incubation in the Upper Watershed).

NGO 10-77

Water withdrawn by Tacoma Water from the North Fork Wellfield represents an exercise of Tacoma's First Diversion Water Right claim. As such, Tacoma logically addressed any constraints on use of the North Fork Wellfield under HCM 1-01, Minimum Instream Flows Under First Diversion Water Right. The degree of protection afforded by conservation measures would not be affected by whether proposed actions are addressed in individual conservation measures or grouped into categories.

NGO 10-78

The potential risks of channel dewatering associated with withdrawals from the North Fork Wellfield are acknowledged in the supporting rationale for HCM 1-01 (see HCP subsection 5.1.1). An assessment of the degree of risk to aquatic resources and anticipated effectiveness of the proposed conservation will be evaluated during the Services' deliberations on issuing Tacoma Water an ITP.

NGO 10-79

Use of the South Tacoma wellfield during periods of withdrawals from the North Fork Wellfield was considered during development of the conservation measure and is specifically addressed in HCM 1-01.

NGO 10-80

Tacoma has indicated it is currently unaware of any alternative groundwater source that could be brought to bear in lieu of the North Fork Wellfield.

NGO 10-81

Tacoma's operation as an unfiltered water supply is an important means of cost control for Tacoma's water utility. If filtration is required in the future, it may be possible to meet the requirement though the use of a membrane filtration system. Currently, the technology of membrane filters is developing rapidly, and Tacoma hopes to utilize this technology at some point in the future if filtration is required. However, membrane technology has not yet developed to the point where a plant of adequate capacity to meet Tacoma's needs has been built. The decision to delay filtration is in keeping with Tacoma's obligation to minimize the costs charged to ratepayers for water supply.

NGO 10-82

It does not appear that forest practice is the only or even primary source of turbidity in the Green River system. In recent years, Seattle has experienced turbidity difficulties of tremendous impact despite the very limited logging that occurs in the Cedar River Watershed. See General Comment Response 10 for additional information.

NGO 10-83

See Specific Comment Response 10-38.

NGO 10-84

As explicitly noted in HCM 2-05, the transport and release of juvenile salmonids above Howard Hanson Dam is contingent on approval by the Services:

> "If supplementation of juvenile salmonids into the Upper Green River Watershed is determined to be beneficial to Green River fish runs by the NMFS and USFWS, Tacoma will transport and release juvenile salmonids above Howard Hanson Dam" (*emphasis added*).

The Services believe this contingency is a critical component of the proposed conservation measure for the reasons stated by the commenter.

NGO 10-85

There are three reasons why the discussions of wildlife in the HCP and DEIS are not as extensive as the corresponding discussions of fish. First, most of the Covered Wildlife Species are rare on the Covered Lands, whereas Covered Fish Species are known to occur in the Green River. The Covered Wildlife Species are generally rare because the Green River watershed is at or beyond the limit of each species' geographic range, and/or because past land management practices throughout the watershed have displaced the species from the area.

Second, the impacts of Tacoma Water's activities on the Covered Wildlife Species are expected to be minimal, while the potential for Tacoma Water to impact Covered Fish Species is considerably greater. The withdrawal of water has little or no impact on the Covered Wildlife Species, and the low rate of timber harvesting proposed by Tacoma is anticipated to result in a low potential for incidental take.

Lastly, the wildlife habitat conservation measures included in the HCP are extremely conservative in favor of protecting the Covered Species. Roughly 74 percent of the Covered Lands would be dedicated to habitat reserves in the Natural and Conservation Zones, and a sizable portion of the remaining 26 percent would be dedicated to riparian buffers, upland management areas, and leave-tree patches.

Also, see General Comment Response 28 for a discussion on the use of best available science by the Services when making permit decisions.

NGO 10-86 and 10-87

See Specific Comment Response NGO 8-2. The commenter asserts that the DEIS fails to analyze the direct, indirect, and cumulative effects to ESA listed and non-listed fish stocks throughout the Green-Duwamish Watershed. The Services believe that the effects to fish stocks have been

addressed. Table 4-1 in the DEIS shows the activities that are anticipated to result in effects to the human environment in a different quantity, or a different manner under each of the action alternatives, as compared to the No Action Alternative. The DEIS presents a comparative analysis of these direct and indirect effects in subsections 4.2 and 4.3. Subsection 4.4 presents a comparative analysis of the cumulative effects of the Proposed Action. See General Comment Response 3.

NGO 10-88 and 10-89

See General Comment Response 30 and Specific Comment Response NGO 8-2. The DEIS analyzed cumulative impacts under various land use categories within the Green River Watershed, and within the region such as agricultural and forest uses. The cumulative assessment assumed that the land- and water-related conditions described by the commenter (e.g., water quality conditions, fish passage barriers, availability of habitat restoration sites) were part of the existing environment (i.e., the baseline condition of the upper, middle, and lower watershed). This baseline condition was analyzed in Section 4.0, Environmental Effects. Mitigation was designed in light of these known land use and instream conditions to meet the objectives of the ESA.

NGO 10-90

See General Comment Responses 15, 16, and 30.

Comment Responses to The Mountaineers (NGO 11)

NGO 11-1
Comment noted.

NGO 11-2
Comment noted.

NGO 11-3
See General Comment Response 11 concerning the impacts of the forest management on riparian areas, salmonid habitat, and water quality.

NGO 11-4
Comment noted.

NGO 11-5
Comment noted.

NGO 11-6
See General Comment Responses 5 and 7.

NGO 11-7
Tacoma uses a variety of funding sources for watershed land acquisition, including timber sales and the water quality fund.

NGO 11-8
See General Comment Response 7.

NGO 11-9 through NGO 11-12

See General Comment Response 27 for a discussion of the instream flows and natural flow variation; see General Comment Response 17 for a discussion of increasing instream flows to provide additional resource protection.

NGO 11-13

Comment noted.

NGO 11-14

Comment noted.

NGO 11-15

See General Comment Response 21.

NGO 11-16

See General Comment Responses 18 and 19.

NGO 11-17

See General Comment Response 19 and Specific Comment Response TRI 2-49.

NGO 11-18

See General Comment Response 12. Raising the Howard Hanson Reservoir level would not require the removal of any elk. Elk would be displaced from foraging in areas inundated by the raised water level, but alternate foraging areas will be provided in permanently managed shrub and brush plots and in early seral stands in the Commercial Zone. These areas would be readily accessible to the displaced elk. There would be no need to physically move any of the elk.

NGO 11-19

Comment noted. This is proposed in HCM 2-03 and is part of the USACE Additional Water Storage Project. By planting inundation-tolerant vegetation adjacent to areas inundated by Howard Hanson Reservoir and along lower reaches of tributaries flowing into the reservoir, denuded shorelines would be re-vegetated with more water-tolerant plant communities for both fish and wildlife habitat

and will lessen erosion from wave action. The HCP does not suggest which plant species would be used, only that they should be tolerant to inundation. The recommended plant species to be used would be determined during the USACE's final design of the Additional Water Storage Project with agreement by WDFW and Tacoma Water. Plant species native to western Washington are preferred.

NGO 11-20

Comment noted.

Tim Romanski
US Fish and Wildlife Service
510 Desmond Dr. SE. #102
Lacey. WA 98503

Dear Mr. Romanski:

RE: Tacoma's Habitat Conservation Plan (HCP) for its Lands & Operations in the Green River Watershed & Related Environmental Impact Statement (EIS)

1 Please require the utmost effort by Tacoma to save wild chinook salmon runs on the Green River. I want you to ensure that Tacoma's HCP guarantees the restoration of these and other salmon and steelhead runs and other species as well.

2 The HCP should end logging on Tacoma's lands to help heal the watershed. Forests help fish by keeping fine sediments out of the rivers. Trees help provide slow, steady return flows to the river and streams after rain and snow. They shade the streams to keep the water cold, they provide habitat for all potential threatened species. Tacoma should be required to buy
3 additional lands to help restore the watershed.

4 The HCP should keep flows in the river as natural as possible, including natural high flows which are important to fish. A lot of water must be in the
5 river to lessen the effects of pollution & help keep the water cool for salmon.

6 The HCP must not allow additional water storage at the Corps of Engineers' dam. The juvenile salmon cannot find their way through the reservoir and need less water storage, not more. The two dams impact salmon by not permitting upstream passage at all. Tacoma should be required to build fish
7 ladders around them. Fish should not be trucked around them.

8 The HCP must require full restoration of the natural movement of gravel and sediment downstream which is now impaired by the dams. Spawning habitat
9 below and above the dams must be restored. Tacoma must also restore the large woody debris that occured naturally in the watershed.

10 The HCP must require that Conservation and Re-Use of water is the method for restoring the river.

11 The HCP must mitigate Recreational losses from Tacoma's use of the River.

12 Please consider these comments to include by adoption and incorporation by reference the Comment letter for the HCP written by Sierra Club, Cascade Chapter

John Beal, president
Green Duwamish Watershed Alliance
742 S. Southern St.
Seattle WA 98108

Tim Romanski
US Fish and Wildlife Service
510 Desmond Dr. SE #102
Lacey, WA 98503

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10 The HCP must require that Conservation and Re-Use of water is the method for restoring the river.

11 The HCP must mitigate Recreational losses from Tacoma's use of the River.

12 Friends of the Green River thanks you for this opportunity to comment. Having read the comment letter of Sierra Club Cascade Chapter, we wish to incorporate by reference their letter minus anything related to Pipeline 5. Friends of the Green River has an agreement with Tacoma re

**SOUTH KING
COUNTY CHAPTER
WASHINGTON COUNCIL TROUT UNLIMITED**
**18605 106th Place, SE
Renton, WA 98055**

March 8, 2000

Tim Romanski
Project Biologist
Fish and Wildlife Service
510 Desmond Drive, SE
Suite 102
Lacey, Washington 98503-1263

Mike Grady
Project Biologist
National Marine Fisheries Service
510 Desmond Drive, SE
Suite 103
Lacey, Washington 98503-1263

Reference: City of Tacoma's Habitat Conservation Plan for Green River Watershed

Dear Messrs. Romanski and Grady:

1 We have reviewed the referenced Habitat Conservation Plan and the Services' Draft Environmental Impact Statement. Overall, with one exception, we are pleased with the documents and generally support the proposed action alternative (Alternative B).

2 Tacoma has done a good job of pulling together the very complex planning that has been accomplished in the interest of further use of the Green River for water supply, and in pursuit of salmon and steelhead recovery.

3 As our representative shared at the February 29 public meeting, we do take issue with that element of your proposal calling for the transfer by trucks of large woody debris from behind Howard Hanson Dam to random release below the Tacoma Headworks dam. The transferred debris would then be transported during high water events down the middle Green River, into the lower Green, and perhaps eventually reaching Elliott Bay. We view your proposal as an uncontrolled experiment, one that has evidently not received a lot of thought. Where else has something like this been tried? If anything comparable to the Green River large woody debris transfer has been done and documented through scientific monitoring, please provide us a copy of such documentation.

While we are strong proponents of fish habitat restoration, through the proper placement of woody debris at strategic locations in a stream, we believe that each system needs to be evaluated and planned for this treatment on its own merit. Trying to restore the river to "natural" conditions is commendable. We understand why fish biologists would propose this.

4 Fred Goetz, Corps of Engineers fish biologist, was very eloquent in his arguments for the transfer of woody debris at the February 29 meeting. However, we don't believe that the Corps of Engineers is ready to change the flood control operation of Hanson Dam to allow the extreme winter flows below to reach the levels obtained prior to that project. The pre-dam high discharge flows provided the medium for moving large woody debris down through the system and adjusting the log jambs that now occur in segments of the lower middle Green. Trying to get the same placement density of large woody debris as may have occurred prior to the dam does not make much sense when the flow regime has been changed so much. Mr. Goetz cited the Nisqually River as a model for large woody debris distribution. Strange that the Nisqually chum and steelhead runs have crashed whereas the Green River enjoys healthy runs of both species and wild Chinook.

5 The documents are inadequate in their discussion of the woody debris proposal and specifically the adverse and even deadly possible impacts on heavy recreational use of the middle river by whitewater rafters, kyakers, inner tubers, drift boat fisherman and others. With the regulation by Hanson dam the public has come to enjoy throughout the year the river in a wide-range of activities. Public use grows annually. Even under present conditions, the river can be hazardous. Lives have been lost and boats have been sunk. The lower middle section, below Whitney Bridge, already has a great deal of woody debris; enough to challenge boaters under certain conditions of water flow.

6 You should be aware of the very heavy use of the lower portion of the Green River by tribal and non-tribal drift boat fishers, throughout most of the year. Within the last several years there have been at least four drift boat sinkings due to encounters with large woody debris. Every March our chapter joins the Muckleshoot Indian Tribe, Washington Department of Fish and Wildlife, and the Green River Trout Club in a wild steelhead brood stock capture program that relies on the use of drift boats in the middle Green River. We have enough difficulties navigating the plentiful large woody debris already in place. More large woody debris could block use of the lower Middle River and adversely impact the long-term wild steelhead recovery program for the upper watershed above Hanson Dam. A major large woody debris blockage now exists in the Green River below Highway 18 that precludes safe passage by boaters to the Auburn and Kent.

7 We ask that Tacoma, and your agencies reassess the large woody debris transfer proposal and look at locations that lend themselves to secured placement where the wood can provide valuable fish benefits. The release of large quantities of uncontrolled large woody debris is incongruent with the river as it exists today and with the intensive public use of the stream. Your proposal could result in the river being placed off limits to public use.

8 Before further action is taken on woody debris placement we ask that a stakeholder group be established by Tacoma to discuss the woody debris transfer concept and work out acceptable alternatives. The proposal set forth in your report is not acceptable and, if implemented, could result in lawsuits if anyone is injured or killed. We don't believe the City of Tacoma or the congressional delegation wants to be part of something like that or the negative media attention that would result.

9 We would be pleased to have a representative on a woody debris stakeholder committee as described above. I can be reached at (425) 277-3942.

Thank you for this opportunity to comment on your documents.

Sincerely,

Robert Larsen V.P.
for

Joseph Madrano
President

Cf. Representative Adam Smith
Representative Jennifer Dunn
Representative Norm Dicks
Senator Slade Gorton
Senator Patty Murray

APR 3 2000
N60-4

Rainier Audubon Society * PO Box 778 * Auburn, WA 98071
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March 29, 2000

Tim Romanski
U.S. Fish and Wildlife Service
Habitat Conservation Plan Program
510 Desmond Drive, S.E., Suite 102
Lacey, Washington 98503

Dear Mr. Romanski:

The Rainier Audubon Society appreciates the opportunity to comment on the city of Tacoma's proposed Habitat Conservation Plan for its 15,000 acres within the Green River watershed in south King County.

Our general concern with HCP's is that their 50-year duration, with no reopener clauses, increases extinction risk for threatened and endangered species. Our specific concerns with the proposed HCP centers on proposed commercial logging, and on forest management deficiencies that would result in inadequate species protection.

1 It is our conclusion that the HCP does not meet the Endangered Species Act's Section 10 requirements, or the standards implementing the "no surprises" policy. We ask the U.S. Fish and Wildlife Service and National Marine Fisheries Service to withhold incidental take permits until the deficiencies can be corrected and compliance with the Endangered Species Act achieved. The following deficiencies are noted:

1. The plan fails to mitigate take to the maximum extent practicable.
2. The plan does not quantify biological goals and objectives
3. The plan does not comply with the requirement that management actions must not appreciably diminish chances of recovery.

Deficiency One
We are not convinced that plans for commercial logging mitigate take to the maximum extent practicable. We are especially concerned with the logging proposal because of the habitat that will be lost to the Additional Water Storage Project.

2 Choosing the no-logging alternative would have environmental benefits for the Green River watershed that would be superior to those of the proposed alternative. As the draft environmental impact statement points out, sediment input to surface waters in the no-logging alternative would be reduced compared to the proposed alternative, due to the absence of soil disturbance and new road construction related to timber harvest. Also, there would be increased spawning and rearing habitat benefits for anadromous fish.

3 There are better alternatives to commercial logging. We urge the city to work with Rep. Dicks and other members of the Washington congressional delegation to seek support from the Land and Water Conservation Fund for the land purchases commercial logging would fund. Another alternative is to finance land purchases from water rates. Commercial logging would raise an estimated $600,000 per year, which translates into $7 per customer each year. For less than 60 cents per customer each month, the city could raise the necessary funds for land purchases and forego commercial logging. The city has not presented convincing evidence that increasing water bills by this nominal amount would be "impracticable."

4 The city of Seattle has agreed to manage the Cedar River watershed without commercial logging. We believe the city of Tacoma should provide the same level of protection for the Green.

Deficiency Two
5 The lack of measurable objectives is also troubling. Narrative objectives would invite endless disputes about their meaning, and moreover, do not provide meaningful benchmarks to determine whether habitat conditions sufficient to ensure species recovery are being achieved.

Deficiency Three
6 The plan states that in the Natural Zone, danger trees that are felled "may" be left on the ground. It also states that harvest may be permitted "to improve habitat for one or more fish or wildlife species." The language in both instances is unacceptably vague.

7 For the Natural Zone to truly achieve its objective of succession to late seral stages, it is vital that dead and downed wood be left to enrich the soil, provide nutrients and nurse logs for new forest growth, and habitat for wildlife that depend on dead and downed wood. The plan must spell out the criteria under which "danger" trees would be harvested, and in which harvest would be permitted "to improve habitat for one or more fish or wildlife species."

8 Furthermore, the plan would not provide enough down wood for pileated woodpeckers, protection of old-growth forage habitat for Pacific fishers and northern goshawks, or year-round protection of occupied marbled murrelet habitat. It should be noted that Simpson Timber Co.'s HCP retains all occupied murrelet habitat. The city of Tacoma should do no less.

9 As a result of these deficiencies, we do not believe that the HCP meets the fundamental purpose of the Endangered Species Act, to conserve threatened and endangered species and the ecosystems upon which they depend. Accordingly, we request the FWS and NMFS to withhold incidental take permits until the deficiencies are corrected and the plan can achieve compliance with the Endangered Species Act.

Other points we wish to raise:

10 Water Efficiency: The city of Tacoma has taken noteworthy steps to improve water efficiency. However, we believe that more aggressive efficiency and reuse measures must be taken by the city and its wholesale water customers in order to reduce water diversions and their impacts on wildlife. The city and its wholesale customers should provide incentives to encourage implementation of "beyond code" water efficiency measures. A notable example of the kind of "outside-the-box" measures needed to safeguard water resources is the King Street Center building in downtown Seattle, which captures rooftop rainwater for toilet flushing, saving 1.4 million gallons of fresh water per year.

11 We also urge the city and its wholesale customers to step up public education encouraging residents to landscape with native plants that do well in local growing conditions, practice "grasscycling," and forego lawn watering during the summer.

12 Growth: We are concerned that the proposed increase in water diversions and the Additional Water Storage Project will have growth inducing impacts that will further encourage sprawl in south King County, which in turn will lead to additional proposals for water resource development that will cause harmful impacts on fish and wildlife. This issue requires additional analysis.

Thank you for your attention to our concerns.

Sincerely,

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National Audubon Society

Washington

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March 28, 2000

Tim Romanski
U.S. Fish and Wildlife Service
Habitat Conservation Plan Program
510 Desmond Drive, S.E., Suite 102
Lacey, Washington 98503

RE: National Audubon Society Comments Regarding the Tacoma Water Habitat Conservation Plan

Dear Mr. Romanski:

1 The Washington State Office of the National Audubon Society has reviewed the Draft Environmental Impact Statement and the Habitat Conservation Plan (HCP) for Tacoma Water's (City of Tacoma Public Utilities Water Division) proposed Incidental Take Permit (ITP), for its forest and water management activities in the Green River Watershed in Southern King County, Washington. Based upon our analysis, we have concluded that the proposed HCP fails to meet some of the requirements of the Endangered Species Act (ESA), and its implementing regulations and policies. Consequently, we urge that the Services withhold issuance of an ITP until the provisions of the plan can be modified to bring it into compliance with the ESA.

Our comments primarily address take and the impacts of take in the terrestrial habitats of the upper watershed.

2 According to section 10(a)(2)(B) of the Endangered Species Act and associated Federal regulations, HCPs must meet six requirements before an incidental take permit can be issued. It is imperative that the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services) rigorously apply these criteria in their evaluation of the proposed plan. These requirements are:

1. all takings must be incidental,
2. impacts must be minimized and mitigated "to the maximum extent practicable,"
3. there must be both adequate funding, and provisions to address "unforeseen circumstances,"

4. the taking must "not appreciably reduce the likelihood of the survival and recovery of the species in the wild;"
2 5. The applicant must ensure that additional measures required by federal regulators will be implemented, and
6. federal regulators must be certain that the HCP can and will be implemented.

3 Furthermore, the new "Five-Point Policy" for implementing the so-called "No Surprises" assurances requires that HCPs must state measurable biological goals and objectives, and
4 must have monitoring and adaptive management provisions relevant to the desired biological outcomes.

Based upon our analysis, it is our conclusion that the proposed HCP fails to meet several of these requirements. First, the plan fails to minimize and mitigate the impacts of take to the maximum extent practicable, as required by law. Second, the plan proposes biological goals and objectives that are not expressed in quantifiable terms, as required by the Secretary's Five Point Policy. Third, by implementing measures that will not achieve the stated goals, the plan fails to comply with the requirement that management actions must not appreciably reduce the likelihood of survival and recovery.

1. Failure to minimize and mitigate impacts to the maximum extent practicable:

The Tacoma Water HCP does not provide convincing evidence that Alternative B mitigates take to the maximum extent practicable, or that Alternative C—no commercial timber harvest—is not practicable. Unlike a timber company, whose sole source of revenue is the sale of forest products, Tacoma Water has alternate sources of revenue. The potential losses incurred by a cessation of commercial timber harvest could be compensated by an increase in the price of water. Because Tacoma Water is a publicly funded monopoly, and does not have to compete in a global market as do timber companies, it should be held to a higher mitigation standard.

The HCP and its supporting EIS fail to objectively and independently evaluate assertions by
5 the applicant that stronger mitigation measures are "impracticable" or "infeasible." Such assertions are not supported in the text by reliable and specific documentation of impracticability or lack of feasibility. Instead, the public is asked to accept at face value the contention that increased prices for water are not possible. In short, the public is asked to accept severe risks to the viability of permitted species, based upon the mere conjecture that consumers are unwilling to pay higher water rates.

Tacoma Water's assertion that prohibition of commercial timber harvest is impracticable is even less convincing in light of the recent Cedar River Watershed HCP developed by the city of Seattle. Experience in that case demonstrated that most water purchasers did not object to paying higher rates in exchange for enhanced security of fish and wildlife populations. Unless Tacoma Water can provide evidence that ratepayer resistance to increased prices leaves no alternative but to continue commercial timber harvest, Alternative B must not be considered the maximum amount of mitigation practicable.

2. Failure to state measurable biological objectives:

Throughout the HCP, wildlife and habitat objectives are stated in vague, subjective, qualitative terms that do not commit the applicant to any specific outcome. Objectives such as "appropriately manage lands," "protect habitat," or "minimize the effects of timber harvest" do not provide the public with any assurances that the impacts of take will be adequately mitigated. Such terms invite future disputes over the exact meaning of "appropriate" or "minimize," and do not allow an adaptive management program to assess whether an objective has been achieved. Thus no certainty is provided for biological
6 resources. Because the HCP lacks measurable objectives regarding many fish or wildlife populations or habitat, the monitoring and adaptive management components can not contribute to the security of listed species.

Objectives must be expressed in terms of desired resource conditions, not merely in terms of management prescriptions. For example, the objective for snags, green recruitment trees and logs should state the desired number or volume of each of these components desired on the landscape. Management prescriptions should be applied to achieve these objectives. This allows management prescriptions to be assessed using monitoring, and adjusted if necessary using adaptive management.

3. Failure to "not appreciably reduce the likelihood of the survival and recovery of listed species in the wild" resulting from inadequate mitigation measures to achieve the stated goals:

A) Management of the "Natural Zone":

The HCP states that the long-term goal for the "Natural Zone" is to allow forest stands to develop into late seral condition through natural forest succession (p. 5-78). Yet the management prescriptions for the natural zones allows the removal of "danger trees" from the stands. The rationale section on page 5-78 contains additional qualifiers on the prohibition of logging, stating that timber harvest will be allowed if it is conducted "to improve habitat for one or more fish or wildlife species." The stated goal for the natural
7 zone will not likely be achieved if timber is removed from this zone.

It is unclear from the HCP how the natural zone will be managed. HCM 3-01B prescribes "removal" of danger trees. Elsewhere in the text, however, it is stated that if danger trees are felled, they *may* be left in place on the ground (p. 5-82, HCM 3-01F, first bullet point). The latter must be required if the HCP is to meet its stated goal of allowing Natural Zone stands develop into late-seral forest conditions.

There is ample evidence in the forestry and wildlife literature documenting that dead and down wood are essential components of late seral forest condition. "Natural forest succession" includes more than the mere growth of trees. It also includes the death and decomposition of trees, and the development of complex habitat structure on the forest floor composed of down logs in various states of decay, as well as standing snags. Any proposal to remove trees from the natural zone is incompatible with the goal of developing "late seral

forest condition through natural forest succession." To achieve this goal, dead or "danger" trees must be retained in the stand. If it is necessary to reduce hazards from "danger trees," these trees should be felled in a safe location and be retained on the forest floor. This should be explicitly prescribed in HCM 3-01B.

7

The conditions under which timber harvest in the Natural Zone may be conducted "to improve habitat for one or more fish or wildlife species" (p. 5-78, next-to-last sentence) are not clearly articulated in the HCP. This open-ended exemption from the prohibition on logging in the Natural Zone renders HCM 3-01B unenforceable. Consequently, the public receives no assurances that forests in the Natural Zone will achieve the desired condition. The HCP must be revised to disclose to the public the precise circumstances under which timber harvest "to improve habitat for one or more fish or wildlife species" will occur. Furthermore, such activities must not be allowed to occur without evaluation and written consent of the appropriate federal agencies.

8

B) Prescriptions for snags, green recruitment trees and logs:

While these prescriptions are an improvement over current forest practices, they are still insufficient to justify permit coverage for species which require large snags and/or high volumes of down wood.

9

The prescription to leave four logs 12" in diameter and 20 feet long per acre will not even come close to providing the volumes of down wood observed in studies of pileated woodpecker habitat. In one such recent study in the Blue Mountains, Torgerson and Bull (1995) observed average down wood volumes of about 110 cubic meters per hectare. The prescription in the Tacoma HCP will yield approximately 9.4 cubic meters per hectare, or about 8.5% of the levels suggested by the best available science. Managing down to this level places the pileated woodpecker at considerable risk. An incidental take permit should not be issued for pileated woodpecker unless down wood volumes can be maintained at levels more closely approximating those reported in the wildlife literature.

10

C) Pacific Fisher:

The HCP notes that one reason for chronically depressed populations of fishers is "a general loss of habitat to logging of old growth coniferous forest." Yet the HCP proposes to clearcut 3,858 acres of mature forest over the life of the plan. To mitigate this take of potential fisher foraging and denning habitat, the HCP merely proposes seasonal buffers around known denning sites. This mitigation is inadequate for three reasons. First, the fisher is so rare and secretive that it is unlikely that an active den site would ever be detected on Tacoma Water's lands before harvest operations commenced (there appears to be no provision to survey stands for fisher presence before logging). Second, the prescription proposes only *seasonal* protection of denning sites. After denning season the applicant would be free to destroy the denning habitat. Third, fisher populations are limited by more than merely the lack of denning sites. The loss of forests with high prey densities—i.e. forests with high canopy closure, abundant large woody debris, large cavity trees, and dense understory vegetation—is also a limiting factor (Lewis and Stinson 1998). The prescription

11

to mitigate impacts on fishers does nothing to address this factor. Consequently, the
11 incidental take permit should not cover Pacific fisher unless steps are taken to limit harvest in the Commercial Zone to provide adequate foraging habitat for fishers.

D) Northern Goshawk:

The same principle described for Pacific fisher also applies to Northern goshawk. Too
12 much emphasis is placed on merely providing seasonal protection for nests. Unless prescriptions are adjusted to protect the maximum amount of existing foraging habitat, permit coverage should not be extended to Northern Goshawk. We recommend that permit coverage be phases in as suitable habitat increases later in the permit period.

E) Pileated Woodpecker:

13 The prescription to merely "give preference to" leaving trees with signs of pileated woodpecker use is entirely inadequate. See the comments on observed down wood levels in pileated woodpecker habitat under 3. B) above.

F) Vaux's Swift:

The prescription to merely "give preference to" leaving trees with signs of Vaux's swift use
14 is entirely inadequate. Vaux's swift roost and nest trees are extremely rare, and every effort should be made to preserve them. Because of their rarity, maintaining safety buffers around these trees is a practicable means of mitigation. Unless the prescription is changed to specify that all Vaux's swift nest and roost trees will be preserved, this species should not receive ITP coverage.

G) Marbled Murrelet:

The prescription to merely provide *seasonal* protection to occupied marbled murrelet habitat is entirely inadequate. ITP coverage should not be granted for this species unless all occupied habitat is protected year-round. Surveys to detect murrelet occupancy must be
15 required for at least two consecutive nesting seasons before harvest. To claim that mere seasonal protection of occupied murrelet habitat is the maximum practicable strains the credibility of Tacoma Water. If Simpson Timber Company, a for-profit private enterprise, found it practicable to protect *all* occupied murrelet habitat (and some *un*occupied stands of suitable habitat as well), there is no reason that such protection should be deemed impracticable for Tacoma Water.

<u>Regarding Issuance of an Incidental Take Permit</u>

The purpose of the Endangered Species Act is to conserve threatened and endangered plants
16 and animals and the ecosystems upon which they depend. This conservation objective must be the paramount test applied by the Services in evaluating the adequacy of the HCP. Our analysis concludes that the Tacoma Water HCP fails this test. The proposed excessive take of covered species habitat, the lack of quantifiable resource objectives, and the inadequate

mitigation combine to create an unacceptable level of uncertainty for wildlife resources. If implemented as currently proposed, the HCP will create an excessive level of risk to public
16 resources, and will not guarantee a reasonable probability of meeting the conservation objectives of the ESA.

Therefore, the National Audubon Society advises that the requested Incidental Take Permit be withheld on the grounds that: 1) the HCP does not guarantee that impacts of the permitted acts will be minimized and mitigated to the maximum extent practicable, 2)
17 that the HCP does not express measurable biological objectives, and 3) that the HCP fails to demonstrate that the permitted acts will not appreciably reduce the likelihood of the survival and recovery of listed species in the wild. The National Audubon Society urges the Services to withhold issuance of an ITP until the provisions of the Tacoma Water HCP is modified to bring it into compliance with the Endangered Species Act.

Respectfully submitted,

Timothy P. Cullinan
Director of Science and Bird Conservation

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Torgersen, T.R. and E.L. Bull. 1995. Down logs as habitat for forest dwelling ants: the primary prey of pileated woodpeckers in northeastern Oregon. Northwest Sci. 69:294-303.

Date: 03/31/2000 2:59 PM
Sender: Tim Romanski
To: Jon Hale
Priority: Normal
Subject: Fwd:Tacoma Water proposed HCP

Author: Tim Romanski at TPO-OLES
Date: 03/31/2000 2:59:34 PM
Priority: Normal
To: Jon Hale
Subject: Fwd:Tacoma Water proposed HCP

Forwarded w/Changes

Author: David Adams <skoolum@nwlink.com> at FWS 03/31/2000 12:54:04 PM
To: tim_romanski@fws.gov at FWS
Subject: Tacoma Water proposed HCP

Forward Header

Subject: Tacoma Water proposed HCP
Author: David Adams <skoolum@nwlink.com>
Date: 03/31/2000 12:54 PM

March 31, 2000

Tim Romanski
U.S. Fish and Wildlife Service
Habitat Conservation Plan Program
510 Desmond Drive, S.E., Suite 102
Lacey, Washington 98503

RE: Tahoma Audubon Society response to Tacoma Water's proposed Habitat
Conservation Plan

Dear Mr. Romanski:

1 The Tahoma Chapter of the National Audubon Society has reviewed the Draft Environmental Impact Statement and the Habitat Conservation Plan (HCP) for Tacoma Water's (City of Tacoma Public Utilities Water Division) proposed Incidental Take Permit (ITP), for its forest and water management activities in the Green River Watershed in Southern King County, Washington. Based upon our analysis, we have concluded that the proposed HCP fails to meet some of the requirements of the Endangered Species Act (ESA), and it's implementing regulations and policies. Consequently, we urge that the Services withhold issuance of an ITP until the provisions of the plan can be modified to bring it into compliance with the ESA.

2 Our comments primarily address take and the impacts of take in the aquatic habitats of the upper watershed.

According to section 10(a)(2)(B) of the Endangered Species Act and associated Federal regulations, HCPs must meet six requirements before an incidental take permit can be issued. It is imperative that the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services) rigorously apply these criteria in their evaluation of the proposed plan. These requirements are:

1. all takings must be incidental,
2. impacts must be minimized and mitigated "to the maximum extent practicable,"
3. there must be both adequate funding, and provisions to address "unforeseen circumstances,"
4. the taking must "not appreciably reduce the likelihood of the survival and recovery of the species in the wild,"
5. The applicant must ensure that additional measures required by federal regulators will be implemented, and
6. federal regulators must be certain that the HCP can and will be implemented.

2

The proposal to re-introduce an ESA listed species (Chinook Salmon, in this instance) to a critical life stage habitat that has been significantly impaired. Extensive logging in the upper Green River Watershed has altered original stock spawning gravels in both composition and availability. Tributary stream temperatures in some instances exceed Washington State water quality standards. As well as posing potential sub-lethal effects on juveniles, higher stream temperatures induce earlier emergence timing and the subsequent problems of available forage and exposure to predation. Has the question of genetic alteration of this stock been fully addressed? Will possible changes in the existing run take place by removing the fish from current spawning areas and then introducing them into impaired or limited spawning and rearing habitat?

3

Tacoma Water's policy of cutting timber to improve water quality is unexceptable. The Services review of the proposed HCP is predicated upon the health of the species listed. Until such time as impaired conditions are remedied either over time with no logging, or through active restoration efforts and no logging on contributing streams, no Incidental Take Permit should be issued.

4

Sincerely,

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March 31, 2000

Tim Romanski
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510 Desmond Dr. SE, Suite 102
Lacey, Washington 98503-1263

Mike Grady
National Marine Fisheries Service
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Re: Comments on the Green River HCP, DEIS, and Implementation Agreement

To Whom It May Concern:

The Center for Environmental Law & Policy thanks both Tacoma Public Utilities (Tacoma or TPU) and the Services for the opportunity to comment on the draft HCP (HCP), draft EIS (DEIS), and Implemenration Agreement relating to Tacoma's operations on the Green River.

CELP'S COMMENTS ON THE GREEN RIVER HCP AND DEIS

The Center for Environmental Law & Policy (CELP) is a nonprofit, membership organization dedicated to clean, flowing waters for Washington. CELP is integrally concerned with conserving and restoring the state's precious water resources, and protecting the unique marine and riverine life that depends upon these resources.

CELP is specifically concerned with protecting instream flows for the many rivers and streams in the state. Any attempt at modeling a flow regime for a river entails an incredible amount of uncertainty. Protecting the natural functions of a river to the greatest extent possible is the most important variable in any equation that attempts to balance river use with ecological health. The Proposed Second Supply Project actually increases artificial interference with the Green River, instead of minimizing and mitigating the level of current interference. The Second Supply Project includes further alterations to Tacoma's existing facilities, and places a weighty reliance on the Green River for regional water supply. While the project guarantees higher base flows in summer months, these higher flows will come from spring runoff stored and released to mask the effects of current withdrawals in the summer season. This creates an even more artificially altered flow regime, and presses the weight of regional water demand upon an already-troubled river system.

1

The Green River should be managed to minimize the effects of current withdrawals, to avoid placing any more reliance on the Green for regional supply, and to more closely approximate a natural flow regime. The Services are contemplating providing Tacoma with a 50-plus year license to kill fish. Before gaining such a license, Tacoma should be required to minimize their
2 current burdens on the Green, rather than increase reliance on the river to fulfill indefinite regional demand in the future. Tacoma should also reduce its reliance on pulling more and more surface water out of the Green by better utilizing the water they currently do divert. By implementing aggressive conservation strategies, seeking water right transfers to meet future demand, and exploring reuse options, Tacoma can greatly reduce the burden placed upon the Green by municipal water demand, and keep more water instream for fish.

The following comments address CELP's specific concerns with Tacoma's management plans under this HCP, as well as with the Services' DEIS and Implementation Agreement.

FLOWS

Summary of Flow Regime in HCP

Under Tacoma's proposed plan, flows set by Ecology under the Instream Resource Protection Program (IRPP) will be followed from November to July, and are applicable to Tacoma's First and Second Diversion Water Rights. Under the Muckleshoot Agreement, Tacoma will maintain higher minimum flows for summer and early fall. This includes seasonal restrictions on the Second Diversion Water Right through the setting of seasonal minimum flows. These base flows focus on "promoting a healthy instream ecosystem". *See* HCP at pg. 5-19.

The HCP also states that "[m]aintenance of minimum flows will provide a level of resource protection but will not provide the full range of flow variability needed to satisfy ecosystem function. Flow variations, to the extent allowed within the operation of HHD, are provided by other habitat conservation measures." *See* HCP at pg. 5-17. With an accelerated refill rate for water stored behind Howard Hanson Dam (HHD), TPU will create a block of non-dedicated water that can be used for (1) augmenting HHD releases during short-term low flow periods in spring; (2) augmenting HHD releases during late May and June to protect steelhead incubation; (3) suspending HHD storage during storms to allow freshets to pass; or (4) providing short-term freshets to aid downstream migrating salmon. *See* HCP at pg. 5-39.

Uncertainties in Modeling and Inadequacy of Base Flows

These seasonal increases in base flows and additional storage to provide for artificial freshets may offer some improvement for Green River habitat. Yet even these management goals are not based on a solid understanding of what management regime will best benefit the Green
3 River system and salmon. Many uncertainties and assumptions exist in Tacoma's overall plan for implementing this HCP, and many of the measures in the HCP will need to rely on further studies and analysis to be complete and/or effective. For example, Tacoma states that "further studies are needed to more fully determine the overall effects of different refill rates" at HHD. *See* HCP at pg. 5-40. Also, many assumptions are drawn about habitat needs -

"[m]aintaining higher base flows is assumed to benefit outmigrant survival by increasing their rate of migration through the HHD reservoir and lower mainstem river." *See* HCP at pg. 5-41.

While the river system may be too altered to perfectly approximate the natural flow and variation that existed prior to diversion alterations, the HCP should more fully recognize the potential problems associated with relying on current models and understanding of fish needs. Both the IRPP flows as well as the concept of setting "base flows" in general have been highly criticized as inadequate to protect the full range of needs of any river system. *See* D.T. Castleberry et al., *Uncertainty and Instream Flow Standards*, 21 Fisheries 20 (1996); Dilup Mather et al., *A Critique of Instream Flow Incremental Methodology*, 42 Can. J. Fish. Aquat. Sci. 825 (1985); Holly A. Coccoli, *Effects of Springtime Flow Alteration on Side Channel Habitat in the Green River*, University of Washington Master of Science Thesis (1996). By setting minimum flows, Tacoma and other water managers are only concentrating on the instream needs of the fish - the "critical fish requirements". They do not take into account the effect stream flows have on the river ecosystem as a whole. An ecosystem approach includes consideration of lateral and vertical habitat as well as instream habitat - lateral being the riparian areas and floodplain extending away from the river, vertical including the water flow and habitat below the river's surface. According to Holly Coccoli, "... the minimum flow requirements established under the I.R.P.P. and the Muckleshoot-Tacoma settlement agreement... fail to meet standards suggested in the recent literature for multiple flows to protect aquatic resources." *See* Coccoli, at 10. "A more ecosystem-based streamflow management framework requires integration of flow regimes to maintain four groups of biotic and abiotic resources:

1) Overbank flows that inundate riparian and floodplain areas;
2) Floodflows that form floodplain and valley features;
3) In-channel flows that sustain the function of the instream system; and
4) In-channel flows that meet critical fish requirements." *Id.* at 24.

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Minimum flows provide a worse case protective mechanism, and should not be used as a stop gauge against which water diversion and withdrawal effects are forcefully pushed. While base flows assume that fish are protected at a set level, most side channels will not necessarily be protected even at Tacoma's target flows.

Adaptive Management and Flows

Tacoma does address the pitfalls of relying on base flows by committing to a series of flow management research measures to better understand the complex relationships of the Green River system, including the relationships between lateral and side-channel habitats. *See* HCP at pg. 6-7. These management measures are intended to "provide NMFS and USFWS and other members of the Green River Flow Management Committee with the knowledge and opportunity to better manage flows and fisheries in the Green River", and are intended to aid in Tacoma's adaptive management. *Id.*

4

While we commend Tacoma for recognizing the inadequacy of the flows set in the HCP, this research commitment lacks any real teeth. Tacoma will never be required to change any habitat conservation measures to implement the lessons learned from this research. The HCP

clearly states that Tacoma *may* modify implementation of the HCP based on the results of this research, but *if and only if* Tacoma consents first: "any modifications to the conservation measures identified in the HCP shall not represent additional commitments of money, water, or other resources without the consent of Tacoma." *See* HCP at pg. 6-4. 4

The HCP further states that, "[a]s information and understanding of the relationships between the managed flow regime and the biotic resources of the Green River increases, the operation of HHD can be refined within the range of legal and institutional requirements to balance needs of various fish species, life stages, and water supply." *See* HCP at pg. 5-30. The HCP needs to identify these institutional and legal requirements. Under "No Surprises" guarantees, Tacoma will not be liable for changing or altering habitat measures, and will not have to alter agreed-upon flows for the next 50 years. Also, Tacoma is contracting to provide a set amount of water for regional supply - a set amount that does not provide for future variation and reallocation to fish needs so long as base flows are met. Due to these project constraints and conditions, the HCP needs to clarify just how adaptive management will allow for any really effective change in the flow regime when research and analysis reveal the need for such change. 5

Conclusion re: Flows

We commend Tacoma's efforts in conjunction with the Muckleshoot Tribe to increase flows to benefit fish, and to fund research efforts to better understand the needs of the Green River system. We do not agree, however, with nailing this flow regime down in a 50-year plan. Where monitoring and analysis reveal the flows to be inadequate to protect the health of the Green River system, adaptive management within the confines of this HCP will not allow for needed change. 6

PROBLEMS WITH ADAPTIVE MANAGEMENT

Adaptive Management Goals are at Odds with "No Surprises" Guarantees

Tacoma has signed an implementation agreement with the Services that states nothing in the HCP or EIS can cause a reduction in its water supply. The Services and Tacoma have chosen adaptive management as a way to respond to uncertainty – yet this is not sufficient when it conflicts with "No Surprises" guarantees. The Services cannot allow so much certainty to Tacoma's operations when so much uncertainty exists in how to adequately protect the Green River, and balance water use with maintaining properly functioning river habitat.

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While we realize these guarantees represent the crux of the Services' "No Surprises" policy and that such guarantees will be a part of the HCP under the Services' scrutiny regardless of our comments, the Services should provide more assurances that adaptive management will be taken seriously. We respectfully request that the HCP better explore and explain the interplay between adaptive management and "No Surprises" guarantees, and Tacoma's responsibility to change its operations when analysis reveals the need to do so for habitat protection. Furthermore, the Services should ensure that Tacoma's plan mandates enough management

flexibility so that, when the needs of fish are not being adequately met, adaptive management changes will actually make a difference. One suggestion for achieving greater management flexibility is explored below.

Greater Flexibility in Municipal Storage Amount

Adaptive management within the confines of "No Surprises" guarantees allows for minor management changes within well-defined project constraints. A fixed amount of water dedicated to municipal storage provides an example of one such project constraint. While storage of water behind HHD is being touted as a source of extra water for flow enhancement purposes as well as municipal supply, this stored water comes with certain costs. Such storage only serves to shift water around in time by using spring runoff to mask the effects of increased withdrawals on low summer flows.

A great amount of uncertainty exists with the various modeling and assumptions relied upon in this HCP, yet nothing in it provides for meeting the needs of fish should the planned measures prove ineffective. What if the flows are found to be inadequate? What if it is determined that fish need more side channel connectivity in certain years to allow for successful migration? We'd like to suggest that Tacoma expand project constraints to more fully address these concerns. One suggestion involves making the block of storage dedicated to municipal use a flexible rather than fixed amount. This would allow greater flexibility in meeting the needs of fish, and ensure that fish will still be taken care of even if some of the variables relied upon in this HCP turn out to be miscalculated. The purpose of this HCP is to ensure that Tacoma's actions do not hinder successful recovery of listed species – this necessarily entails a certain amount of flexibility on the part of Tacoma's management practices. Adaptive management cannot work if management does not have room to change enough to make a difference when the situation demands.

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Adaptive Management and the Second Supply Project Agreement

A draft Second Supply Project Agreement, dated January 2000, has been negotiated between the cities of Tacoma, Seattle, Lakehaven, Covington and Kent. *See* Second Supply Project Agreement (Jan. 2000). Seattle recently released a DEIS proposing that the Seattle City Council authorize Seattle's signature on this Agreement. *See* Proposed Second Supply Project Agreement Draft Environmental Impact Statement, Seattle Public Utilities (Jan. 2000). The Agreement covers the use of Tacoma's Second Diversion water between the five cities, and creates a Project Committee composed of one representative from each city (with Tacoma and Seattle having more voting shares than the other three cities). *Id.* at 14, 15. The Project Committee must approve any and all amendments and modifications to the "Project Specifications". *Id.* at 15. The "Project Specifications" include the water from the Second Diversion Water Right, the Second Supply Pipeline, improvements at Tacoma's Headworks dam, etc. *Id.* at 11. The "Project Specifications" also include all the fisheries and environmental enhancements committed to by Tacoma under this HCP. *Id.*

9

Under this Agreement, Tacoma will not have sole operating control over its operations on the Green River. Tacoma will have control over "day-to-day operations" only. *Id.* at 12. Tacoma will have only 3 of 9 votes when any change or modification to the project is proposed. *Id.* at

15. Signing this draft Agreement is part of Tacoma's proposed plans under this HCP. The fact that Tacoma will eventually be only one of five partners, and must obtain approval from its other partners as specified in a separate Agreement, must be addressed. Specifically, how can Tacoma guarantee it will be able to meet the adaptive management goals in the HCP, when any change or modification to habitat measures requires approval from its other partners? The HCP should include a thorough discussion of this. 9

Changed Circumstances

Specific concern over the incompatibility between "No Surprises" and adaptive management arises with the handling of "changed circumstances" under the HCP. For "changed circumstances" (including fires, floods, and landslides), Tacoma has agreed to certain management actions and in every case considers "no additional measures" to be necessary. *See* HCP section 3.2. However, as part of Tacoma's agreed-upon management listed under the HCP section devoted to landslides, Tacoma will conduct timber harvesting in an area designated as the "Conservation Zone" as well as in the "Commercial Zone". *See* HCP at pg. 3-5. While any timber harvest is likely to increase the natural occurrence of landslides, this zoned timber harvest is listed as a measure which will "minimize the occurrence and impact of landslides". *Id.* Even where adaptive management analysis proves this harvest to be detrimental and necessarily in need of change, Tacoma will never be required to change this under the "No Surprises" guarantee. 10

As a related issue, a disconnect exists between the Implementation Agreement and HCP, which are at odds with regard to Tacoma's responsibilities to manage for "changed circumstances". The Implementation Agreement seems to state in Section 9.1 and 9.2 that, in the event of changed circumstances, Tacoma would be *required* to change its operations to further mitigate harm to listed species. Yet the HCP states in Section 3.2.3 that Tacoma is *not required* to do additional mitigation or incur response costs in the event of changed circumstances *unless Tacoma specifically consents*. The Implementation Agreement, under Section 5.0, prevails when a direct conflict between the Agreement and the HCP occurs. Yet the section in the Agreement dealing with changed circumstances incorporates the HCP specifically, and makes unclear which controls. We request that the HCP be rewritten to provide the Services with enforcement authority in the event of changed circumstances. Change is an integral part of any ecosystem. In the event that Tacoma's activities such as timber harvesting are found through adaptive management analysis to be inadequate protection for the river environment, Tacoma should be required to alter its operations. 11

STATE WATER LAW REQUIREMENTS

The Implementation Agreement states that the Services will issue Tacoma an Incidental Take Permit (ITP) upon "satisfaction of all other applicable legal requirements". *See* Implementation Agreement at pg. 6. CELP respectfully requests the following state water law requirements be sufficiently addressed before the Services consider issuing Tacoma an ITP.

Connection with Seattle Does Not Qualify as an Intertie

The DEIS states that Tacoma is "expected to participate in a regional intertie with suppliers in King and Snohomish Counties to make efficient use of regional water supplies..." *See* DEIS at pg. 2-5. The DEIS defines an intertie as "a water conduit system that allows an exchange of water between adjacent suppliers and service areas." *Id.*

12 The proposed connection between Seattle and Tacoma under the Second Supply Project does not qualify as an "intertie" under state law. An intertie cannot include development of new sources of supply to meet future demand, nor can it be for emergency supply purposes. *See* RCW 90.03.383. The connection between Tacoma and Seattle's systems will require development of new sources of supply to meet future demand, and states emergency supply as one purpose. Where the DEIS addresses this connection as an intertie, an overview and analysis of state law requirements for interties should be included to clarify this issue.

Tacoma's Water Right Does Not Allow for Delivery of Water to Seattle

Seattle has recently put a draft EIS out for public review, concerning its role in the Second Supply Project. Seattle changed the designation of "intertie", however, stating instead that Tacoma's Second Diversion Water Right permits delivery of water to Seattle. This argument
13 centers on language in the permit stating that the "place of use" for Second Diversion water includes the area served by Tacoma, "by direct service or interlocal agreement". *See* Second Diversion Water Right Permit, Department of Ecology Permit No. S1-00726P. However, no interlocal agreement existed between Seattle and Tacoma at the time of permit application or issuance. Consequently, Tacoma's Second Diversion Water Right does not cover delivery of water to Seattle, and Tacoma would at the very least need to apply to Ecology to change the place of use.

Third Alternative Requires Change

14 Construction and operation of a new diversion on the Green River would require that Tacoma apply to Ecology for a change in the point of diversion.

Permit Needed for Municipal Storage Behind Howard Hanson

Under state water law, Tacoma must obtain a permit for putting water stored behind HHD to beneficial use for municipal supply purposes. *See* RCW 90.03.370. This permit must comply
15 with other applicable sections of Washington's Water Code, requiring that Ecology find water to be available, the use to be beneficial, no impairment to existing rights, and no detriment to the public interest. *Id.* The beneficial use and public interest inquiry require that Tacoma show a need exists for this project. Specifically, Tacoma should discuss whether regional demand for this water really validates the supply alternative chosen.

PLANNED GROUNDWATER DEVELOPMENT MUST BE INCLUDED IN THE PROPOSED ACTION

The DEIS considers development of the South Tacoma Aquifer as one potential independent source of water, then discounts this option and does not include groundwater development in the Proposed Action or the other two alternatives. *See* DEIS at 2-27 and 2-28. Yet a bilateral Storage Agreement between Seattle and Tacoma calls for the development of 4-5 new wells in the South Tacoma aquifer, providing an additional 3300 acre feet of water per year. *See* Seattle/Tacoma Storage Agreement, attached as Exhibit U to the Second Supply Project Agreement (Jan. 2000). Seattle's Proposed Second Supply Project Agreement DEIS, recently out for public review, also reinforces the fact that groundwater development is part of the overall Second Supply Project. *See* Proposed Second Supply Project Agreement Draft Environmental Impact Statement at S-4, Seattle Public Utilities (Jan. 2000).

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Since the Second Supply Project includes development of additional groundwater supplies by Tacoma, the DEIS and HCP must fully analyze this development as part of the Proposed Action. Specifically, the DEIS and HCP must analyze impacts to groundwater and surface water, as well as discuss compliance with state water permitting requirements. As Tacoma's current water rights do not cover development of an additional 3300 acre feet, Tacoma would need to apply for a permit to withdraw more groundwater. Increased withdrawals from the South Tacoma Aquifer could affect flows in connected surface water bodies, impair senior water rights, and deplete the aquifer where withdrawals exceed recharge. These impacts must be fully analyzed and included under the Proposed Action Alternative in the DEIS, and under Tacoma's operational plans in the HCP.

ALTERNATIVES CHOSEN ARE INADEQUATE

The only alternative to the Proposed Action besides the No Action Alternative involves construction and operation of a new diversion on the Green. The main benefit of this diversion is that it would be farther downstream than the current diversion, and would thereby displace the effects of water withdrawal.

This "alternate diversion" alternative still includes the Second Supply Project and Tacoma's plans to be a regional water supplier. Consequently, the only three alternatives considered by the Services are: (1) not granting an ITP, resulting in Tacoma continuing its Second Supply Project plans since, according to the Services, Tacoma's activities have not yet been linked with quantifiable levels of take; (2) granting an ITP, and allowing Tacoma to continue with its Second Supply Project plans under the Proposed Action; and (3) granting an ITP, and allowing Tacoma to continue with its Second Supply Project, essentially only changing the point of withdrawal on the Green to displace flow effects for one portion of the river. These options can be summed up as follows: Tacoma becomes a regional water supplier, Tacoma becomes a regional water supplier, or Tacoma becomes a regional water supplier.

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Tacoma's plans to become a regional water supplier, however, will place a weighty regional reliance on the Green River now and in the indefinite future. Beyond this, the Second Supply Project Agreement, while intently negotiated between the five cities, is not yet a "done deal". Considering that 32 species will be affected by this HCP, 7 of which are listed, and that the
18 Second Supply Project currently relies on a number of variables, the Services should provide another alternative. This alternative should include development of an HCP for the Green River, and an assessment as to whether Tacoma's activities will hinder salmon recovery. As Tacoma is potentially liable for ESA "take" regardless of the other four cities' involvement in their operations, this added alternative should not involve Tacoma becoming a regional water supplier.

DEDICATED vs. NON-DEDICATED STORAGE BLOCK CONCEPT IS CONFUSING

According to Habitat Conservation Measure 2-02, fish needs during refill can be met with the use of a non-dedicated block of stored water. *See* HCP at pg. 5-31. The explanation of this is
19 incredibly confusing. Specifically unclear is what portion of water will be used, and how an accelerated refill rate can create a portion of "non-dedicated" water. Also, a discussion should be included about the counterintuitive strategy of using stored water to compensate for the water storage effects.

MITIGATION FUNDING

Tacoma plans to fund mitigation measures outlined in the HCP in part from timber sales. According to the DEIS, Tacoma has informed the Services that requiring any reduction in these timber sales will create a disincentive for them to continue their water quality and habitat management efforts. This certainly seems like a veiled threat.
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Tying restoration efforts designed to repair and mitigate for impacts from activities such as timber harvesting, to the very revenues derived from this same activity is a counterintuitive, backwards attempt at conservation. The Services should require much more responsible and reliable methods of mitigation funding before granting Tacoma the right to kill more fish.

WATERSHED OWNERSHIP

Tacoma owns approximately 10% of Green River watershed lands, and CELP commends Tacoma for its past efforts to acquire these lands. However, activities conducted on the other
21 90%, including logging, greatly impact the Green. We suggest that Tacoma follow Seattle's Cedar River example, by acquiring more of the watershed and instituting a no harvest commitment on all acquired lands.

CONSERVATION SHOULD BE TACOMA'S MAIN FOCUS

Tacoma expects to take more water out of the Green to meet future water demands. Tacoma
22 needs to realize, however, that it cannot just continually seek new water rights to meet growing water needs – conservation is not a secondary or alternative option to gaining new water. While showing some initial savings since 1991, Tacoma has still failed to set specific savings goals, and has relied on largely voluntary water use reductions. The HCP does not provide for a more aggressive conservation strategy, and Tacoma officials stated at a public
23 meeting that, while conservation will be included in their 50-year operating plan, no definite plans exist to institute specific savings goals. Beyond this, a 50-year ITP deal will not require Tacoma to implement any additional conservation initiatives even when new technology becomes available to allow for greater savings.

The water that Tacoma pulls out of the Green severely affects flows and fish habitat. The cost of this down the road will far outweigh the cost of conservation efforts that can put flows back in the Green. Tacoma could satisfy much of its service area's future demand for water by implementing an aggressive conservation strategy and exploring options such as water
24 transfers and reuse. We commend Tacoma for the conservation savings already realized within its service area. Yet we strongly suggest Tacoma realign its water supply strategy to make conservation and reuse its primary focus, as opposed to a focus on pulling more and more water out of the Green to fulfill not only its own, but regional growth as well, in the indefinite future. Tacoma should be required to do more to conserve water before they are allowed to kill fish by taking more of it.

CONCLUSION

The Services possess great latitude in requiring an ITP applicant to minimize and mitigate the effects of their actions to the maximum extent practicable. The Services' first priority rests
25 with ensuring recovery of listed species, and they have a duty to ensure Tacoma's actions will not appreciably reduce the likelihood of survival of listed species.

With the standard set at recovery, the Services need to do more to ensure that Tacoma's actions will not hinder the successful recovery of listed species. They should not assume the only options available involve Tacoma becoming a regional water supplier, placing regional water reliance on this one river system. Instead the Services need to include an alternative that involves an HCP, but does not involve Tacoma becoming a regional water supplier. They should also require Tacoma to minimize and mitigate its actions to the maximum extent practicable. Tacoma should: (1) be more responsible with the water it diverts by committing
26 to aggressive conservation strategies, with the goal of keeping more water instream; (2) not harvest timber on any of its watershed lands; (3) commit to better adaptive management implementation by expanding project constraints to mandate a more flexible response to unmet needs of fish, or by scaling back "No Surprises" guarantees; and (4) recognize the inherent uncertainty in locking down a flow regime for the next 50 years, and allow enough room to change this regime as necessity demands.

Considering how recently people have started to realize the true extent of the salmon crisis, and how recently people have started studying what to do about it, one incontrovertible fact emerges: science is changing all the time, and we are constantly proving ourselves wrong. The
27 methods used to set base flows, for example, are already being criticized by scientists as unreliable for protecting fish and fish habitat.

An ITP is something akin to an insurance policy – with Tacoma paying a small fee and passing liability for the unforeseen consequences of its actions to the federal government. Considering the incredible uncertainty surrounding river management and the needs of fish, coupled with the crisis point at which this state finds itself in trying to recover salmon, the premium on this policy should be much, much higher.

Again, thank you for the opportunity to comment.

Sincerely,

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March 31, 2000

RE: Tacoma Water Habitat Conservation Plan and draft Environmental Impact Statement for the Incidental Take Permit.

Dear Mr. Romanski,

I'm writing on behalf of the Pacific Crest Biodiversity Project and the Northwest Ecosystem Alliance to provide comments on Tacoma Water Habitat Conservation Plan (HCP) and draft Environmental Impact Statement (DEIS) for the Incidental Take Permit (ITP).

The proposed HCP Tacoma Water Department's Green River Habitat Conservation Plan provides a prime opportunity for the City to provide the best possible long-term protection of its lands, the water and the fish and wildlife dependent upon these resources. This opportunity will be missed if the City continues to rely on commercial logging of its forestlands in the upper Green River watershed. Ending logging and other improvements to the forest plan must accompany, not substitute for improved fish and flow provisions of the HCP, as addressed in other parts of these comments.

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We object to a commercial logging program and the subsequent issuance of an incidental take permit by the US Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) for the six federally listed threatened and endangered species, one species proposed for listing, and 14 other unlisted species. The HCP fails to meet the requirements of the Endangered Species Act (ESA), 16 USC §§ 1531-1534, and for this reason alone, the permit request must be denied unless significant modifications occur.

The DEIS does not meet the requirements of the National Environmental Policy Act and its implementing regulations, 42 U.S.C. § 4331 et seq., 40 C.F.R. § 1500 et seq. The DEIS fails to

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adequately consider, evaluate, or document the direct, indirect, and cumulative effects of the destruction of terrestrial lands and evaluate or document how the considerable loss of habitat and lack of any mitigation measures will permit attainment of the objectives of the Endangered Species Act and other federal statutes and regulations.

The DEIS entirely fails to consider, evaluate, or document the environmental effects of fragmenting mature forests, isolating forest parcels, and eliminating critical wildlife habitat in the watershed. Impacts

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to species dependent on terrestrial environments are wholly impossible to determine as survey-information is lacking or insufficient. The amount of "take" and effectiveness of measures to minimize and mitigate "take" are equally impossible to determine.

Our analysis indicates that the HCP fails to meet the requirements of the Endangered Species Act (ESA)

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and associated regulations. Consequently, we recommend the incidental take permit for City of Tacoma lands be denied unless the HCP and EIS are significantly modified or the no-commercial logging alternative is deemed the preferred alternative. Furthermore, as the HCP process relies heavily on the accurate application of scientific information, we recommend that future iterations of the HCP be

4 reviewed and evaluated by an independent panel of academic and agency scientists, and by a citizen review board.

In summary, the following issues must be resolved:

Process and Documents

1) Quantifiable data and resource objectives lacking

5 According to ESA regulations and rules, the HCP must "include specific biological goals and objectives...." for measuring the effectiveness of conservation planning. In addition, biological objectives represent "...specific measurable targets for achieving the goals of the operating conservation program." (Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process." Federal Register, 64;45, March 9, 1999. Biological goals must correspond to full mitigation of impacts to the species, minimization and mitigation of impacts to the maximum extent practicable, and species' recovery needs, and other basic impact minimization and mitigation standards.

6 The Tacoma Water HCP fails to establish measurable biological goals for recovery, and for measuring "take" minimization and mitigation. Generally, the HCP's resource goals are extremely vague, unverifiable, and unenforceable. The HCP fails to consistently discuss how the HCP and ITP and their resulting habitat conditions, population levels, and other outcomes will relate to the biological goals and standards proposed in available scientific literature. The HCP also fails to provide adequate quantitative analyses or other analyses of how impacts to most of the covered species will affect survival and recovery.

7 *Sierra Club et al v. Bruce Babbitt et al* found that current data on species' conditions and recovery needs must be used; goals included in recovery plans are not sufficient if conditions have changed since those plans were written. Civil Action No. 97-0691-CB-C, Order August 4, 1998, S. Dist., AL, S. Div. The HCP and DEIS fail to meet these requirements. The HCP generally fails to identify species population levels and habitat conditions that would correspond to genuine recovery across the species' ranges, and fails provide concrete quantitative assessments of how the populations and habitat conditions stemming from the ITP and HCP will compare to these recovery standards.

Without quantifiable objectives, there are no substantive provisions that allow for monitoring effectiveness of prescriptions, and adjustments through adaptive management.

2) Proposed baseline is inappropriate

8 Tacoma Water proposes using current conditions as a baseline, yet much of the terrestrial wildlife habitat necessary for supporting listed and unlisted species is highly degraded from poor land use practices. Consequently, the HCP will not reduce the risk of extinction to many species, including those requiring snag habitat, small streams, intermittent streams, and other habitat for survival and recovery unless considerable restoration of wildlife habitat is conducted.

9 3) Best available scientific information not employed

NEPA and ESA section 7(a)(2) and the Act's administrative rules require agencies to use the best available science. The HCP does not apply or consider the best available scientific information.

10 The HCP employs arbitrary rationales for thinning as a method for "accelerating" old growth conditions, completely unsupported by any scientific evidence. Throughout the draft EIS/HCP, there is discussion of the benefits of specially designed treatments to accelerate the development of old-growth conditions. However, no context is provided along with these statements. For example, what are the specific criteria which will be used to determine whether a stand needs to be "ecologically thinned"? What evidence are these criteria based on?

11 Creating old-growth through thinning has yet to be done. Studies show that there is no evidence that the thinning of stands 30 years or older results in any net ecological benefits[1]. The concept that one can "accelerate" old-growth conditions by thinning remains largely an untested assumption. Therefore, it should not be the primary basis of an old-growth restoration strategy. Furthermore, for an activity whose long-term benefits are unclear, thinning is an expensive experiment.

4) Adaptive management provisions will not allow for needed changes in management

12 The Tacoma Water HCP fails to provide an adequate effectiveness monitoring program to provide for adaptive management changes. Given that the HCP is for 50 years, adaptive management provisions must be substantive and effective.

13 Sufficient vegetation and wildlife sampling must be conducted to establish monitoring trends and the presence and distribution of species across the landscape. As proposed, the HCP will only train Tacoma employees in the identification of covered species, in the event that a species is sighted, leaving the discovery of a covered species completely to chance. This method will provide no accurate data as to the presence or absence of a covered species over the life of the HCP, and render any meaningful adaptive management provisions useless.

14 The HCP's compliance and effectiveness monitoring must occur frequently over time, including monitoring of species' populations and reproduction, habitat quantity, habitat and specific habitat components, habitat trends, and other goals and indicators. The Tacoma Water HCP has failed to do this.

5) High Standard for ITP

15 ITPs and HCPs should only be used in limited circumstances. The ITP and HCP should not be used to eliminate or degrade habitats across significant portions of the landscapes, ecosystems, or species' remaining ranges. Likewise, ITPs and HCPs should not be used where more effective alternatives exist. The no-commercial logging alternative is clearly a more effective alternative to the proposed action.

16 The Services must consider this alternative seriously, especially in light of the fact that City of Tacoma has provided no justification for commercial logging in their statement of purpose and need. Furthermore, the City has evaluated no alternatives to revenue generation. The ESA standard of minimizing impacts and providing mitigation to the maximum extent practicable has not been met.

17 It is essential to maintain late-successional forest habitat needed by several listed terrestrial species and to protect the upper Green River and its tributaries for fish habitat. The standard for an incidental take permit is far higher than for the state Forest Practices Act or Tacoma's current Forest Land Management Plan. Pursuing the goals of the Endangered Species Act, especially recovery, must be the driver in this HCP, not commercial logging.

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[1] Carey, A.B. (1998, November) Biodiversity and Intentional Management: A Renaissance Pathway. Science Findings, PNW Research Station, issue 9, p. 3

6) No Surprises still a problem

A 50-year incidental take permit is too long given the no surprises policy. Either a shorter permit period or greater ability to modify the HCP to improve habitat conditions should be established. The current permit provides great amount of certainty to Tacoma, but great uncertainty to the public's fish and wildlife. This is not an equitable agreement, and must be changed. 18

Forest Management

1. Management Zones

Tacoma Water owns 10.1% of the land in the Upper Green River Watershed (14,888 acres), primarily along the banks of the Green River. Under the proposed HCP the existing Management Plan will be retained with few changes. The current forest management plan appropriately eliminated "maximizing" timber volume in the commercial zone. This HCP should eliminate the commercial logging altogether.

Thirty-nine percent of the area (the Natural Zone) will have the highest level of protection and no logging. Another 35% (the Conservation Zone) will sustain some amount of thinning of forests. The conservation zone is designed to develop into late-successional stage habitats. When this occurs the plan indicates logging will cease. While we certainly support the objective of ending the logging, again, we urge caution in manipulation of the vegetation to achieve the desired result. Only in areas recovering from recent clearcutting should be considered for thinning operations. 19

Twenty-six percent of the land (the Commercial Zone) will be used for "producing merchantable timber". The revenues created from these practices will be used in watershed land acquisition, forest management, fish and wildlife habitat and water quality enhancement projects. Such logging activities place a priority of commercial interests over water quality and habitat protection no matter how many environmental precautions are taken.

Any management activities in the protected zones should receive careful scrutiny plus public involvement for significant actions. Salvage logging is of particular concern.

2. Ecological Risks

While some public officials assert that commercial logging will not harm water quality or wildlife habitat, there is much evidence to the contrary. Forests act as giant air and water filters, and also act as reservoirs by increasing water yields in the crucial dry months and reducing flooding in wet months. Preserving those forests diminishes the need for Tacoma's turbidity pool and flood control storage volumes as well as the AWS (Additional Water Storage) project. 20

Logging can produce massive imbalances in the natural soil-forming and erosion cycles, increasing levels of sediment in our drinking water. Tacoma's lands, bordering the Green River, are some of the most vital for water and habitat protection, thereby increasing the need for preserving those forests.

3. Illogical Economics

Funding land acquisition and restoration efforts through commercial logging may establish an illogical economic model. Causing damage to repair damage does not make sense. The long-term costs of repairing ecological damage associated with logging far outweigh the short-term financial benefits (e.g., water filtration costs, landslides, road repair, etc.). Alternatives other than logging revenues, to fund the acquisition of lands in the watershed need to be explored. Timber markets are unpredictable, making logging revenues as a funding source a risky practice. We believe that when all of the above factors are considered (and they must be considered) it will be apparent that commercial logging doesn't economically benefit the community. 21

4. Forests & Wildlife

The Green River watershed has been heavily roaded and logged, with resulting impacts to the native forest ecosystem. Tacoma now manages important wildlife and fish habitat which includes significant late-successional forests. Full protection of these forests is the best assurance of maintaining high water quality and sustaining fish and wildlife populations. The Forest Service has stressed the importance of connectivity in late-successional forests through the checkerboard lands that include the Green River. While the current plan objectives attach greater importance to wildlife and fish habitat than earlier versions, it still fall short of that needed for the conservation and recovery of endangered species.

22

5. Wildlife Species

Many species will be adversely impacted by the proposed action. Those dependent on late-successional forests, including salamanders and other amphibians will be impacted the most. Acquisition and preservation of forests adjacent to the City's ownership could offset the impacts of the reservoir, logging, roadbuilding and other impacts of Tacoma's operations. Rock Creek, Sawmill Creek and Eagle lake would be good choices. A few examples illustrate the flaws of the draft HCP.

23

Marbled Murrelets

Tacoma owns lands in Rock Creek near where marbled murrelet nesting was found last summer. However, Tacoma proposes to continue logging in that area (Commercial zone). The HCP must reverse the trend of loss of habitat, and require restoration of murrelet nesting habitat in this area. Merely promising not to destroy murrelet nesting habitat is not sufficient for a 50 year ITP. Further monitoring for murrelets in the old-growth grove in Sawmill Creek should also be done.

24

Spotted owls

The Services cannot become complacent about this species whose population continues to dwindle. Spotted owl critical habitat units and state SOSEAs have been established in the Green River Watershed, underscoring its significant role as nesting habitat and dispersal habitat for the Cascades population. It is acknowledged as a critical connectivity corridor between the north and south cascades for many species, including the spotted owl. Given the degraded state of the forests in this area, USFWS cannot grant ITPs to destroy additional habitat here.

25

Northern Goshawk

In reviewing the conservation strategies developed for listed species, we would like to raise concerns regarding the lack of information and studies on the northern goshawk. Northern goshawks are highly sensitive to human disturbance. Unbroken canopy of second-growth forests in the lower watershed provide important habitat for goshawks.

Given the lack of information, the goshawk's sensitivity to disturbance, and the importance of second-growth lowland habitat, we question whether the potential impacts of the proposed action to the goshawk have been understated. The main basis for the net improvement to goshawk habitat as stated in the draft HCP is the ecological and restoration thinning of second-growth forests and long-term regeneration of forest habitat. We again question the actual long-term benefits of thinning, given that the practice is still considered experimental. Thinning is not adequate enough to use as a primary conservation measure for goshawks. We also question the baseline used in making this assumption (see: Proposed baseline is inappropriate).

26

We encourage the Services to deem the no commercial logging alternative as the preferred alternative to reduce disturbance in the form of timber harvest and road usage. The no commercial logging alternative would have the greatest positive effect for the northern goshawk, however, nowhere in the EIS is this stated. The EIS must be thorough and accurate in representing the benefits of each alternative.

Pacific Fisher

According to the Washington Department of Fish and Wildlife Status Report on Fisher (September 1998), fishers use forests with a high percentage of canopy closure, abundant large woody debris, large snags and cavity trees, and understory vegetation. While fishers are associated with late-successional conifer forests, they also use younger stands, especially as foraging habitat. Furthermore, the majority of fishers in western Washington tend to be found in areas less than 1800 m in elevation.

27

Since the majority of Tacoma Lands within the watershed are less than 1800m, they provide the best long-term opportunities for habitat recovery for the fisher. However, Tacoma's claim that fisher habitat will improve under the proposed action is questionable. The HCP states that it "will have positive effects on the Pacific fisher by reducing disturbance to denning fishers, increasing riparian protection, and managing for late successional conditions; but overall the positive effect will be minor because few, if any, fishers are likely to occur in the HCP area."

Once again, Tacoma is claiming to create late-successional/old growth habitat through thinning with no scientific evidence that forests will be benefit from such treatments. Nowhere in the HCP does the
28 Tacoma address the risks of thinning, such as windthrow. Thinning stands can expose them to wind, causing excessive windthrow and excessive opening of the canopy. How could this affect fisher habitat? Tacoma also does not discuss how entering younger stands will affect fisher foraging habitat.

Lastly, how can Tacoma claim that if the fisher "does inhabit any portion of the HCP Area, it will occur only in small numbers in the upper watershed" without any reference to surveys conducted in the past or to be conducted in the future. Tacoma cannot rely on chance sightings as an accurate indicator of species distribution across the landscape. If Tacoma is to adequately provide for the protection and, most
29 importantly, the recovery of fisher in the Green River Watershed, Tacoma must actively monitor for species' populations and reproduction, habitat quantity, habitat and specific habitat components, habitat trends, and other goals and indicators. The proposed action alone is not sufficient to achieve recovery of the fisher in the watershed. We believe that the no-commercial logging alternative provides the best and most practicable option for fisher protection and recovery.

6. Unroaded Lands

The unroaded areas left in the watershed are extremely important. These ecological anchors are the largest blocks of intact forest, the most undisturbed streams and provide the greatest security habitat in the watershed. These include Kelly Butte (~14,000 acres) and two smaller areas (Friday Creek, McCain Creek) north of the Green River where the city owns land. Much of the former was protected by Congress when it established a Kelly Butte Special Management Area on the national forest lands in Lester, Sawmill and Rock creeks. This provides a core area for late-successional forest species conservation, but is not sufficient by itself. Plum Creek is aggressively logging its lands, adding to the
30 importance of protecting forests on Tacoma lands.

While some of Tacoma's unroaded lands are allocated to the natural zone, we are still concerned with the proposed logging and roadbuilding in and adjacent to the Kelly Butte roadless areas. The lands remaining in the commercial zone between the Green River and Kelly Butte (sections 24, 19, 20) should be managed to restore a natural forest and eventually included in the natural zone. In the interim, designation of this area in the conservation zone would provide the flexibility to do the restoration work, with the clear objective of re-establishing late-successional forests in an unroaded condition. Additional areas in Champion Creek (section 28), Rock Creek and near Eagle Lake should be treated the same way. The unroaded lands along the Green River (sections 21, 27) should be designated to provide the maximum protection possible with the goal of acquisition of the timber rights as soon as possible.

7. Roads

Roads cause major problems for both fish and wildlife. No new roads should be allowed under the HCP. Even well designed and constructed roads will increase sedimentation and impact wildlife (see FEMAT report) by destroying and fragmenting habitat. The basin is so heavily roaded that it has caused incredible impact to both terrestrial and aquatic systems.

31

We strongly support the decommissioning of roads, especially in the area between the Kelly Butte Roadless Area and the Green River. A significant portion of the road mileage on Tacoma's lands is not needed for administration or access to other owners. These should be obliterated as soon as possible. Ten years should be more than adequate. No additional road access to other ownerships should be granted by Tacoma across its lands.

8. Watershed Analysis

We are pleased that Tacoma will be participating in the watershed analyses scheduled for the basin. The federal watershed analysis has been completed and describes a seriously degraded watershed, with extremely high road densities and little late-successional forest. It is regrettable that the analyses prepared under state rules are limited to physical factors and direct impacts on fish. Cumulative effects are poorly addressed and the analyses do not consider terrestrial species or indirect effects at all. The City should insist that these other issues be addressed in these watershed analyses.

32

9. Riparian

Full protection of the riparian zones is critical to the success of the forest plan and HCP, the recovery of the salmon and other fish of the watershed and maintaining high quality water. While the proposed stream buffers (riparian management zones) were an improvement over the minimal state forest practices standards they are still far below that recommended by federal scientists (FEMAT report). Again, eliminating commercial logging will avoid these problems. There should be no further road building in any riparian zone, and an aggressive decommissioning of roads there commenced.

33

10. Timber Management

The current plan allows considerable commercial logging. The conservation zone still has a 100 year harvest cycle for the conservation zone, with annual harvest acreage of 80 acres. While contiguous even-aged (clearcut, shelterwood) units at 40 acres are below state standards, these practices should be eliminated entirely.

34

The deferral on logging the recently acquired federal lands in the natural zone should be permanent. We have also encouraged the City to acquire the timber rights held by Plum Creek along the Green River as soon as possible, especially in the Kelly Butte roadless area, to implement the Utility's conservation strategies.

Alternative B strategies go to great lengths to try to mitigate for the impacts of additional logging and road building. Most of these would be moot if the HCP just eliminated commercial logging on the City's lands in the watershed. For example, salvage logging for safety near roads would be unnecessary if the road no longer existed. Standards for restoration projects could be patterned on the Seattle's Cedar River Watershed HCP.

35

Proposal: Alternative C modified- No Commercial Logging, Reduced Roads

We propose that the USFWS and the City of Tacoma adopt a "no commercial logging" standard as reflected in Alternative C, with some modification. This alternative should be amended by a provision of

36

no new roads, and specifying substantial road decommissioning. The list of mitigation measures for individual species, under Alternative C (Table 2-18b) appears to allow considerable development. This should be curtailed. Acquisition and preservation of additional forest lands should be required to mitigate for impacts of Tacoma's facilities and operations that have destroyed or degraded late-
36 successional forest habitats for any species noted in the HCP.

The entire land base, other than under the power lines, should be allocated to the natural zone. In recently clearcut areas that are currently in the commercial zone, short term use of the conservation zone prescriptions might be used. These thinning operations in "plantations" should end within five years, and road obliteration commenced in those areas.

Even with the minimum standards established in the plan, the adaptive management approach will require a high degree of caution in order to adjust the forest management and mitigation to address
37 unforeseen circumstances. Monitoring the early management activities is essential to determine if they are providing the benefits expected within the limits of environmental impacts allowed.

Public involvement should be actively solicited for any watershed activities, including restoration
38 projects. The HCP should establish an accountable process for citizens to become involved in decision-making for the watershed *before* plans are realized.

Tacoma can and should develop and implement creative funding alternatives that do not include such destructive activities as commercial logging. Many alternatives could be considered, for example:

- a minimal rate increase
- adjusting rate structures (e.g., adding additional higher priced tier for high summer use)
- a summer surcharge for commercial customers
39 • corporate donations

Once again, the proposed HCP Tacoma Water Department's Green River Habitat Conservation Plan provides a prime opportunity for the City to provide the best possible long-term protection of its lands, the water and the fish and wildlife dependent upon these resources. This opportunity will be missed if the City continues to rely on commercial logging of its forestlands in the upper Green River watershed. Ending logging and other improvements to the forest plan must accompany, not substitute for improved fish and flow provisions of the HCP, as addressed in other parts of these comments.

Thank you for the opportunity to comment on the Simpson HCP, DEIS, and ITP.

Sincerely,

Jasmine Minbashian
Conservation Director
Pacific Crest Biodiversity Project
4649 Sunnyside Ave N. #321
Seattle, WA 98103

Also for the following organization:
Dave Werntz
Director of Scientific Programs
Northwest Ecosystem Alliance
1421 Cornwall Ave, Suite 201
Bellingham, WA 98225

Date: 04/03/2000 7:24 AM
Sender: Tim Romanski
To: Jon Hale
Priority: Normal
Subject: Fwd:Comments on the Green River HCP

Author: Tim Romanski at TPO-OLES
Date: 04/03/2000 7:24:08 AM
Priority: Normal
To: Jon Hale
Subject: Fwd:Comments on the Green River HCP

Forwarded w/Changes

Author: Friends of the Earth NW <foenw@wolfenet.com> at FWS
03/31/2000 4:05:37 PM
To: tim_romanski@fws.gov at FWS
To: michael.grady@noaa.gov at FWS
Subject: Comments on the Green River HCP

Forward Header

Subject: Comments on the Green River HCP
Author: Friends of the Earth NW <foenw@wolfenet.com>
Date: 03/31/2000 4:05 PM

Gentlemen,

Attached are Friends of the Earth's comments on the Green River HCP.

Eric Espenhorst
Friends of the Earth, NW Office
6512 23rd Ave NW #320
Seattle, Wa 98117
206-297-9460
206-297-9468 fax
(See attached file: TacomaHCP.doc)

TacomaHCP.doc

March 31, 2000

John Kirner, Tacoma Water Department
by fax and e-mail

Re: Tacoma Green River HCP

Dear Mr. Kirner:

1 Friends of the Earth (FoE) thanks you for the opportunity to comment on Tacoma's Habitat Conservation Plan Draft Environmental Impact Statement (DEIS). FoE has more than 20,000 members nationwide who support our mission to protect the planet from environmental degradation, preserve biological, cultural, and ethnic diversity, and empower citizens to have an influential voice in decisions affecting the quality of their environment and their lives.

2 Tacoma, Seattle, and the Army Corps of Engineers should jointly conduct an environmental impact statement on the cumulative effects of the Howard Hanson Dam modifications, Tacoma HCP, and Seattle-Tacoma Intertie-Second Supply Project. These projects are inextricably intertwined, and the sponsors must analyze the projects for cumulative effects on salmonids, growth in the region, beneficial water uses, and other topics identified in scoping. This analysis must occur before the projects begin, and the sponsors must incorporate all measures to avoid, minimize, and mitigate the projects.

3 The agencies should not grant the HCP because Tacoma is not meeting the requirements to avoid, minimize, and mitigate for effects. Because it proposes to continue all current activities, Tacoma makes no effort to avoid impacts. In order to minimize impacts,

4 Tacoma must, but is not, adopting an aggressive water conservation program to reduce water use and thus withdrawals from the Green. Lastly, Tacoma must fund all habitat

5 acquisition, enhancement, protection, and restoration to mitigate for the disruption to properly functioning habitat caused by the dams and withdrawals.

6 DOE has closed the Green River to withdrawals. Tacoma should not be withdrawing more water without a thorough review of water rights in the basin, IFIM studies, as well as flow-survival studies for salmonids in the Green.

7 NMFS has not established PFC for instream flows and should not agree to the HCP. Instead, the agency should address all concerns raised in *Using Science in HCPs* by the American Institute of Biological Sciences and the National Center for Ecological Analysis and Synthesis of Habitat Conservation Plans. The 1999 study highlights the need for improved protection for endangered species. In *Using Science in HCPs*, 119 independent scientists examined 43 HCPs in detail and another 208 more generally. The report concludes that critical scientific information about endangered species often is not available for HCPs. It also highlights a major lack of biological monitoring to determine what effect each HCP has on endangered species. The report also finds that HCPs often rely upon unproven management techniques, posing risks to species.

8 Furthermore, NMFS may lack authority to agree to the HCP. In the Federal Register notice for NMFS' HCP regulations, NMFS stated that the agency was not establishing generic authorization for HCPs for threatened species, and that authorization would be established case by case. See FR 55;97, May 18, 1990, pg. 20603 et seq. Arguably, NMFS would need to write ESA section 4(d) rules to authorize HCPs for other threatened salmonids. Furthermore, 50 CFR 227.21(b), which extends ESA section 10 "take" authorization to species covered by 50 CFR 227.21(a). 50 CFR 227.21(a), in turn, states, in effect, that the prohibitions of ESA section 9 apply to threatened salmon species listed in 50 CFR 227.4(f), (g), (h), and (i). Those species are, respectively, Snake River spring and summer chinook, Snake River fall chinook, Central California ESU coastal coho, and Southern Oregon/Northern California ESU coastal coho. Thus it would appear NMFS lacks the necessary authority for species other than those listed here and should not agree to an HCP for Puget Sound chinook salmon.

9 I requested a copy of the HCP and DEIS from John Kirner months ago, and never received a copy. Please send me a copy of the HCP and DEIS as soon as possible. When available please send me the final HCP, final EIS, and any other changes.

These comments focus on financial opportunities available to Tacoma to finance the protection and restoration elements suggested by the Sierra Club, Mountaineers, Pacific Crest Biodiversity Project, other environmental, conservation, recreation, and citizen groups. In its capacity as co-manager of Green River water and salmon, the Muckleshoot Indian Tribe will make recommendations for projects that also should be funded from the opportunities discussed in this letter. These comments are based on analysis of financial statements of TPU's water utility (Water Division 1998 *Annual Financial Report*) as well as information on watershed management (*City of Tacoma's Green River Watershed Forest Land Management Plan* July 1, 1996), and timber revenues and costs provided in response to information requests from Pacific Crest Biodiversity Project.

10 Tacoma should increase its system development charges (SDC) to pay 100% of the costs of system developments, up from the 30-35 % currently planned according to the 1998 Financial Report, page 47. Tacoma should make sure that the SDC for hookups outside urban areas reflects the costs to serve those areas. These changes will create rate equity whereby new ratepayers are paying the costs to serve them and encourage urban infill. Furthermore, some of the revenue that cross-subsidizes growth should fund water conservation and properly functioning conditions in the Green River Basin.

11 Tacoma should ensure that revenue collected for depreciation costs are used to either pay down debt or fund capital projects. Otherwise, future ratepayers will be saddled with a financial liability, and/or debt burden, and a system that requires major capital overhaul. To provide an additional incentive for water conservation, TPU should collect depreciation funding through a summer rate surcharge from all customer classes.

12 Tacoma also must change its rate structure to provide greater incentives for water conservation. All customer classes should pay a higher summer rate. The residential rate encourages lawn watering and other wasteful uses of water during the summer because the first rate block is five times the size of the winter rate block for the same rate according to Tacoma's *Water Rates and Regulations for the Supply and Use of Water*, April 7, 1997. Tacoma's maximum day demand is less than twice average day demand (72 mgd and 123 mgd respectively, according to *Central Puget Sound Regional Water Supply Outlook*, February 2000, Table 4). Consequently, very few of Tacoma's residential customer are likely to see the rate incentive to reduce summer time water use.

13 The revenue from any timber program is impossible to determine, and any claims in the HCP and DEIS about that revenue have no foundation and cannot and do not support any decisions or any alternative. The Financial Report does not provide a line item or note for timber revenue and watershed management costs. The line-item "Other Operating Revenue," which I presume is all or partially timber revenue, has ranged from a low of $354,366 to a high of $789,823 during the past 10 years with no clear trend. Based on records requests for watershed timber sales for the past 20 years, from 1981 to 1985 the utility conducted no timber sales, and during the previous 10 years, timber revenue has generally been less than $200,000 per year.

14 Even in the highest, speculative case, timber revenue is 2.6% of total utility revenues and is a small price to forgo to provide the greatest possible protection to drinking water quality as well as aquatic resources. When combined with other financial reforms, Tacoma should use this process to encourage urban infill and redevelopment per the Growth Management Act as well as protect the environment and properly functioning conditions in the Green per the Endangered Species Act.

Please keep this office informed as to developments in this matter. If you have any questions, feel free to contact me.

Sincerely,

Eric Espenhorst

cc: USFWS, NMFS

NG0-10

March 30, 2000

[redacted] 3 2000

Tim Romanski
U.S. Fish and Wildlife Service
510 Desmond Dr. SE #102
Lacey, WA 98503

Re: 1. Draft Tacoma Water Habitat Conservation Plan DHCP) (December 1999);

2. US Fish & Wildlife Service & National Marine Fisheries Service Draft Environmental Impact Statement (DEIS) for the Proposed Issuance of a Multiple Species Incidental Take Permit for the Tacoma Water Habitat Conservation Plan, Green River Water Supply Operations, and Watershed Protection; and

3. Implementing Agreement for the Tacoma Water Division, Tacoma Public Utilities Habitat Conservation Plan for the Green River, (King County) Washington, Municipal Water Supply

Dear Mr. Romanski:

This letter consists of the comments of Sierra Club's Cascade Chapter, on the City of Tacoma's Habitat Conservation Plan, specifically on the three documents listed above. Sierra Club, one of the largest environmental organizations in the country with approximately 500,000 members, and its Cascade Chapter (most of Washington State) with approximately 20,000 members does appreciate the opportunity to comment on the proposed action. We request that the Chapter be kept informed about the progress of the proposal and that we receive copies of any biological opinions and other decision documents associated with this proposal. Sierra Club has long been involved in issues related to forests, salmon and other fish and wildlife, instream flows and municipal water supply, and regularly comments on HCP's. Sierra Club is also a recreational organization, offering many outings through National Sierra Club, its Chapters, and the Groups that make up the Chapter. 1

Sierra Club, Cascade Chapter, respectfully requests that the Services read all of our questions and comments carefully and answers/responds to each. It is our belief that the ESA mandates that your role is one of protector and restorer of ESA listed species, not of municipal water supply or of the budget of the proponent of this HCP. We expect you to be unswerving in your pursuit of protection and restoration of the species whose fate rests in your hands. Do not delegate that responsibility to the City of Tacoma where there is any doubt that they can and will protect and restore these species even at great cost to themselves.

I. ISSUANCE OF A TAKE PERMIT IS INAPPROPRIATE

SHOULD THE SERVICES ISSUE THE TAKE PERMIT TO TACOMA WHEN IT IS INAPPROPRIATE UNDER ESA BECAUSE IT IS VERY WEAK IN MEETING THE REQUIREMENTS OF THE ESA, INCLUDING THE REQUIREMENT THAT THE DELINEATED SPECIES BE RESTORED?

2

Sierra Club is opposed to the widespread practice of issuing permits to "take" (harm, kill, destroy) species listed as endangered or threatened under the federal Endangered Species Act (ESA) and their habitats across large pieces of land. Issuing an Incidental Take Permit (ITP) to a landowner such as Tacoma who must bear much of the responsibility for the imperiled species' reaching imperiled or threatened status is particularly objectionable for us. Even more so, where the HCP does not provide meaningful and adequate mitigation for many species on those lands and in their waters, such as in the present case. ITP's/HCP's are only to be used in "limited circumstances," according to the HCP regulations of the US Fish and Wildlife Service (USFWS) as indicated in the Federal Register. Sierra Club, Cascade Chapter recommends that USFWS and National Marine Fisheries Service (NMFS) (the Services) use various alternatives to ITP's, which these comments will enumerate later.

SHOULD TACOMA BE GIVEN A "NO SURPRISES" GUARANTEE FOR ITS HCP WHEN THERE ARE MANY UNKNOWNS TO BE DISCOVERED AND THE "NO SURPRISES" GUARANTEE ACTS AS A DISINCENTIVE TO REACHING RESTORATION GOALS?

Sierra Club is very disturbed by and opposed to the "No Surprises" guarantees which are routinely given to timber companies, developers, and others in conjunction with their
3 ITP's. Sierra Club supports and promotes incentives for non-federal landowners to restore habitats and fish and wildlife populations above levels generally required by law, "No Surprises" assurances act as disincentives. They encourage proponents such as Tacoma to fight to lock in HCP's which permit the same practices that brought the listed species to face extinction. While HCP's do sometimes provide some degree of mitigation -- above what might otherwise happen -- such measures are generally very inadequate in getting to the goal of restoration of the species. In the present case, while Tacoma offers to do certain salmon habitat restoration projects, they plan to have covered by the HCP other actions such as increasing -- doubling -- the amount of water storage behind the Corps of Engineers' Howard Hanson dam to the detriment of those same salmon. In effect, such HCP's/ITP's give parties such as Tacoma, with a long history of harmful impact on a number of species with a free pass to avoid their responsibility to get to the goal of restoration of habitats they degrade and the species that use them.

SHOULD TACOMA BE GIVEN AN ITP WHEN ITS HCP WOULD NOT ADEQUATELY PROTECT ALL OF THE SPECIES IT COVERS?

4

The issuance of Tacoma's proposed HCP and ITP would be totally inappropriate because of its impacts on salmonids in particular, but on all the 32 species listed as the subject of

this HCP. For the reasons spelled out herein, Sierra Club objects to the issuance of the ITP.

II. ISSUANCE OF A TAKE PERMIT MAY BE PREMATURE

A. DOES NMFS HAVE AUTHORITY UNDER 50 CFR 227.21(B) TO ISSUE ITP'S FOR EACH SALMONID SPECIES DEALT WITH IN THIS HCP?

4

B. HAVE ESA SECTION 4(D) RULES BEEN WRITTEN AUTHORIZING ITP'S FOR THIS EVOLUTIONARILY

SIGNIFICANT UNIT (ESU) WHICH FOR GREEN-DUWAMISH WATERSHED CHINOOK SALMON IS THE PUGET SOUND CHINOOK ESU? LIKEWISE, HAVE ESA SECTION 4(D) RULES BEEN WRITTEN AUTHORIZING ITP'S FOR THE EVOLUTIONARILY SIGNIFICANT UNIT FOR GREEN-DUWAMISH WATERSHED BULL TROUT? IF NOT, ISN'T IT PREMATURE FOR THE SERVICES TO WORK ON TACOMA'S HCP AND ISSUE AN ITP?

C. ISN'T IT PREMATURE FOR THE SERVICES TO WORK ON TACOMA'S HCP AND ISSUE AN ITP FOR THE THREATENED SPECIES COVERED BY THE HCP?

5

The Federal Register Notice (federal Register 55;97, May 18, 1990) for NMFS' rules governing ITP's and HCP'S notes that "TAKE" permits are not generically authorized for threatened salmon species, and that ESA 4(D) rules must be written to provide such authority.

D. SINCE ITP'S SHOULD NOT BE ISSUED FOR SPECIES UNTIL THEY ARE LISTED, ISN'T THE PROPOSED DECISION TO ISSUE AN ITP FOR OREGON SPOTTED FROG, COHO SALMON, SOCKEYE SALMON, CHUM SALMON, STEELHEAD, AND OTHER SPECIES PREMATURE?

6

Tacoma wants the HCP to cover 32 species, most of which are treated as "species of concern," such as Coho, Chum, and Sockeye salmon and Steelhead. The Oregon spotted frog is treated as a "candidate" for ESA listing. The analysis for these species' needs, the factors of decline, etc. is weak and incomplete at present.

ADAPTIVE MANAGEMENT AND NO SURPRISES

7

As indicated elsewhere in this Document, what is proposed in the HCP is not really Adaptive Management because it allows Tacoma off the hook. Tacoma must face up to its responsibility, as must other players in this Watershed. This is not a game of Pretend. The threatened and endangered species discussed here are real and they need all our efforts toward the goal of recovery.

7 True adaptive management involves creating scientifically quantifiable goals, monitoring and making necessary changes to meet the goals. This HCP's approach could allow any potentially impacting project to continue if properly implemented. This HCP is especially weak with setting proper goals and committing to the necessary changes.

8 Tacoma will not reduce withdrawals of water from the river later unless it is agreed to in the documents.

Not even if it becomes obvious later that withdrawals must be reduced. Not even if Tacoma has other sources of water. Not when Tacoma can spend what it wants and do what it wants with No Surprises.

9 Adaptive management would allow the information to be collected and changes to be made that are necessary for resource protection. This would entail a combination of hypothesis testing, setting quantifiable biological goals, monitoring and implementing the necessary changes to achieve a desired outcome.

10 The HCP does not set the quantifiable biological goals necessary to initiate adaptive management and even if such goals were developed, Tacoma is not committed to implementing the changes that are above a predetermined cost or involve lowering their water withdrawals. This makes it impossible to initiate proper adaptive management as described in the Services guidance documents; Coastal Salmon Conservation: Working Guidance for

Comprehensive Salmon Restoration Initiatives on the Pacific Coast (NOAA 1996) and An Ecosystem Approach to Salmonid Conservation (Spence et al, 1996).

11 Solution: Financial commitment to a scientifically defensible adaptive management process and implementing the needed changes to the Habitat Conservation Measures (HCM) or reducing water withdrawals.

In 1996, scientists of the National Marine Fisheries Service produced a document to guide salmon conservation efforts on the west coast. Coastal Salmon Conservation: Working Guidance for Comprehensive Salmon Restoration Initiatives on the Pacific Coast (NOAA 1996) provides direction for developing a coherent strategy for averting extinction of salmon and for rebuilding these seriously depleted stocks. In this guidance, NMFS outlines three components of a successful conservation strategy:

1. Substantive protective and conservation elements;

2. Certainty of implementation of the elements;

3. A comprehensive monitoring program.

Furthermore, because many of our action will proceed in the face of uncertainty, the NMFS advocates for an adaptive management approach to all conservation actions.

The elements and objectives of this conservation strategy are discussed briefly in the 1996 guidance and are elaborated in a companion document entitled An Ecosystem Approach to Salmonid Conservation produced by Spence et al (the ManTech Report). ManTech provides a synthesis of work on salmonid ecology and more explicitly defines the ecosystem and adaptive management approach that form the basis of the conservation strategy. If this strategy and approach are robust, the principles and objectives that comprise the approach can be used as a template against which to compare any and all conservation efforts—including Habitat Conservation Plans--and assure that these efforts form a coherent program for conservation. 11

Three types of monitoring activity are necessary to assure that the conservation activities proposed are successful in meeting the goals established for them in the HCP (chapter 2):
implementation monitoring (called compliance monitoring in the HCP);
effectiveness monitoring (the project accomplished its objectives); and
validation monitoring (the actions were the "right" ones to meet the goal of conservation). The third type is the most difficult since it requires the development of measures that can track ecosystem characteristics over many years.

Compliance Monitoring

In the HCP, most elements of the compliance monitoring program are clear and well-conceived. Conservation measures are tied to criteria for evaluation, methods and monitoring frequency are specified, and the reporting mechanism is provided. Less clear are some of the contingency measures should the activity not meet design or longevity standards. This is particularly problematic for the suite of instream flows proposed in the HCP and summarized in Table 6-1. Will these contingencies be developed through the inter-agency task force described elsewhere in the HCP? 12

Adaptive Management

There are further concerns for many of the habitat enhancement activities as well. The contingency calls for event-based inspection following year 5 for large woody debris and side channel restoration but makes only a single commitment to repair if the action fails in years 6 to 50. This is contrary to the objectives of the HCP and inconsistent with the relief from take for the 50-year life of the HCP. Some provision must be 13

13 made for further management to assure compliance.

Effectiveness Monitoring

The intent of this type of monitoring is to assess the success or failure of a particular activity or project at meeting its objectives. To that end, the objectives of the action must be made clear and quantitative. Ideally, all conservation actions, whether passive (the protection of wolf dens and eagle nests) or active (large woody debris placement, side channel restoration, or flow management), would have clear and measurable objectives tied to the ecosystem benefits described in chapter 2. For example, gravel nourishment
14 to compensate for lack of transport might have the following objectives: prevent further channel incision in those reaches where transport has exceeded deposition; and provide spawning substrate in reaches where mean sediment size has increased due to reduced gravel recruitment. Associated with these narrative objectives, quantifiable measures and timeframes related to the action must be developed. It appears from Table 6-2 that these objectives are needed for virtually all the habitat-related and flow-related management actions described in the HCP. We suggest translating the ecosystem benefit narratives into objectives consistent with the habitat elements approach advocated by the NMFS in the conservation guidance.

15 Moreover, some evaluation or reference criteria will be necessary to measure against; we suggest that the "Properly Functioning Conditions" approach described in the conservation guidance provides a useful starting point.

Validation Monitoring

This is a crucial but often overlooked type of monitoring. This is intended to measure the appropriateness of the conservation measures to achieving the goals of the conservation plan. It appears that the research commitments made in the HCP (Table 6-3) lean in this direction. However, the elements of the research program seem to be a mix of baseline work and monitoring,
16 and are somewhat confusing. For example, measure RFM-02 A appears to be effectiveness monitoring and should be addressed in that section. These elements should be separated for more clarity, and the monitoring elements tied to conservation goals and objectives. Again, quantifiable measures are necessary for evaluation of the data obtained from this work. Almost no of the elements in table 6-3 can be considered validation monitoring according to the definition given in ManTech. This must be addressed in the HCP to insure long-term system viability.

17 Adaptive management is not simply the passive use of experimental information in management; more usefully, adaptive management structures actions and activities explicitly to obtain needed information. How are the conservation actions called out in the HCP meeting that intent? Particularly

17 those actions that carry an uncertain outcome?

WORKING AT CROSS PURPOSES

18 The Citizens of King County and its Cities will be charged with the responsibility of achieving recovery of Chinook salmon (and other salmonids), but our ability to succeed is lessened by the presence of the dams which block habitat and interfere with natural hydrology, and by the lessening of instream flow due to Tacoma's water supply withdrawal. We are also impinged by Tacoma's plans to increase water supply storage in the Corps' dam's reservoir. Unless Tacoma and the Corps maximize their efforts there is
19 no way we can succeed in our efforts. If Tacoma gets its way, we will be impeded by a number of preexisting conditions that Tacoma made worse by insisting on continuing its wasteful ways with water.

PIECEMEALING AND FRAGMENTATION OF RESPONSIBILITY

20 This HCP should deal with related issues and projects as if they were part of a whole. Tacoma should not be allowed to continue breaking off pieces and projects to make it more difficult to get the City to act responsibly.

21 The Habitat Conservation Measures covered in this HCP could be rendered meaningless because of the lack of complete review of projects such as the AWSP, the Second Supply Project, and the proposed Muckleshoot Hatchery at the same time. For example, many of the conservation measures in the HCP are reliant on successful implementation of the Additional Water Storage project by the Corps of Engineers. Given that the Corps has not completed its Section 7 consultations with NMFS and USFWS, and that the consultations will deal with a greatly reduced species list in comparison to the HCP, it is difficult to review the HCP at this time and be confident that successful implementation of the measures is certain. Concurrent review of this HCP and the Corps' Section 7 biological assessment should be done by the Services. Perhaps the adaptive management section of
22 this HCP should include a "re-opener" on flow management whenever the Corps is required to consult with the Services on newly listed species in the future. Thus, flow requirements for both Tacoma and the Corps could be reconsidered by the Services when new listings occur.

23 On page 3-9, the HCP states that Tacoma will not be obligated to fulfill its flow management commitments in this HCP if natural or operational changes at Howard Hanson Dam result in a revised Corps mandate (including even a "change in USACE policy or management direction"). This approach makes reliance on flow management for HCMs 1-01, 1-02, and particularly 2-02 difficult. At a minimum, any such changes by the Corps should be cause to re-open this HCP under the adaptive management structure. In addition, many measures in the HCP are required by the agreement between Tacoma and the Muckleshoot Indian Tribe. Review of the HCP is difficult without full documentation of the provisions of the agreement. In particular, HCM 2-05, introduction
24 of juvenile fish into the upper watershed, appears to be reliant on construction and operation of a new hatchery on the Green River, which is a component of the agreement

24 with the Tribe. Full review of this hatchery's effects on Green River salmonid conservation should occur under this HCP.

This HCP is presented as a package of actions that are tied to successful implementation of the Additional Water Storage Project by Tacoma and the Corps, with accompanying mitigation measures and resultant commitments to the Muckleshoot Indian Tribe. Please
25 clarify how this document will be applied if one or more of the following occur:

1. The Additional Water Storage Project is not completed. How will the measures in this HCP be applied if the Second Supply Pipeline is constructed but water is not stored at Howard Hanson to augment flows?

2. The second diversion water right is not implemented. How will the measures in this document be applied to the first right? Presumably Tacoma
26 will be operating under a take prohibition as soon as the Section 4(d) rule is published; at this time, it is likely that only the first right will be implemented.

WATER: INSTREAM FLOWS

A fish without the water it needs cannot be saved by dam modifications, Large Woody Debris, tree plantings, etc. Tacoma offers to do various habitat restoration projects, while at the same time the City proposes to take away more water with a second water diversion. It offers to make dam improvements while proposing to take away from the river's natural high flows by doubling water storage to accommodate Tacoma's water supply enhancements. And Tacoma doesn't even need the water. Tacoma's HCP does not provide for reductions in Tacoma's water withdrawal so the total 213 cfs water withdrawal will be locked in for 50 years. This loss of 22% of the base flow in the Green River reduces the chance of survival for all of the 32 species Tacoma proposes for "take" coverage.

27 This HCP does not fully assess the basic impact of removal of up to 213 cfs from the Green River on a routine basis. This flow diversion – the implementation of Tacoma's first and second water rights – represents approximately 22% of the mean annual flow at Palmer. In addition, the HCP does not clearly delineate flow-related impacts of the first right vs. the second right. Depending on the timing of construction of the Second Supply Project, part of the operational period of the HCP may occur prior to the second right being implemented. It is impossible to determine whether mitigation for incidental take relative to the first rightvalone is sufficient.

In addition, because most of the downstream impact analysis in the HCP is based on the IFIM methodology, basic potential impacts of these flow diversions such as alteration of
28 wetland and floodplain hydrology, impacts to Green River water temperatures, etc. are not evaluated. What effect will removal of 213 cfs on a routine basis have on groundwater tables throughout the Green River valley? How will this affect recharge? Wetlands? In addition, the adaptive management approach is not comprehensive in that

no provision is made for reallocation of flow back to the river if monitoring proves it to be a necessary component of salmonid recovery in the Green River watershed. While
29 adaptive management of flow releases using water stored in the Spring is useful, in order for a 50-year incidental take permit to be issued, some sharing of risk between water supply and fisheries may be appropriate.

Further concerns are for divergence from the natural historic high flows of the Green River. The recent past has brought flood control, vast development on the flood plain, and a present inability to undo what has happened to that flood plain. The additional
30 water diversion and the additional water storage project play havoc with the natural hydrologic patterns, perhaps more so with the high flows than the low flows. This effect on the river cannot but impact the fish stocks that evolved in it. Add the impacts of the dams, and the changes due to over-logging and of huge amounts of impervious surfaces brought by land use changes and growing populations, and the fish may wonder if they are in the right river.

Tacoma notes in the HCP that the Upper Green River Watershed is a key to salmon restoration and recovery.

Yet, the North Fork Green River Well Fields in the Upper Watershed, part of Tacoma's
31 water suply and diversion plan de-water a major tributary which would be expected to provide habitat needed for restoration. Those impacts are not dealt with. There is no analysis of those effects.

TACOMA'S PROPOSED GREEN RIVER HCP
COMMENTS ON FISH AND AQUATIC HABITAT
SIERRA CLUB, CASCADE CHAPTER, MARCH 31, 2000

OVERVIEW

Tacoma's HCP lays out a small amount of information on the 11 Anadromous fish species for which the City seeks ITP coverage but falls short on analysis and on
32 qualifying for an ITP under the requirements of the ESA. Fortunately, the Services' DEIS provides more information. As far as the two recently listed ESA species, Chinook Salmon and Bull Trout, are concerned, there are problems in a number of areas. For that matter, the same is true for all of the potentially covered fish species.

AQUATIC HABITAT: ECOSYSTEM VIEW

Sierra Club shares the concerns of the Center for Environmental Law and Policy (CELP) regarding the failure of the DHCP and DEIS to do any analysis of the needs of the Green River's fish stocks in terms of a total ecosystem approach. Sierra Club herein adopts and incorporates by reference the section of CELP's Comment letter on the DHCP and DEIS
33 regarding this concern, which are based on documents by D.T. Castleberry, D. Mather, and Holly Coccoli. Sierra Club shares the concerns of CELP and the three writers that many factors are interrelated. For instance, the DHCP and DEIS do not deal with the presence or lack of insects in the various sub-basins of the Green-Duwamish Watershed and what effects the absence or low count of historically present insects would have on the ecosystem and thereby on the fish species that Tacoma wants covered in the HCP.

THE DAMS: UPSTREAM PASSAGE

The Tacoma dam has blocked fish from moving upstream into the upper watershed since the early 1900's. When the Army Corps of Engineers (ACE) built the Howard Hanson flood control dam (HHD) in the 1960's about 3.5 miles upstream, no fish passage was built on HHD because there was none on Tacoma's dam.

For a number of years, various parties, including the Muckleshoot Indian Tribe (MIT), have urged Tacoma to allow anadromous fish into the Upper Watershed. Tacoma had
34 resisted because of water quality concerns related to spawned out fish carcasses upstream from Tacoma's water diversion. Tacoma agreed to allow a small number of anadromous fish into the Upper Watershed beginning in 1982.

Tacoma has decided fairly recently that they are no longer so concerned with possible contamination of their drinking water supply from spawned out fish carcasses (unless the number of fish gets high), and has been working with the Muckleshoot Indian Tribe and others, experimenting with trucking anadromous salmonids above the two dams to

34 tributaries where they can spawn. However, the juveniles do not make it downstream past the reservoir and the dams which have been killing 92% of any juveniles trying to
35 move downstream of the dams. There is no analysis in the HCP of what factors might be responsible for the high rate of mortality.

The Tacoma HCP's unexamined proposal for Upstream Passage is for Trapping and Hauling fish to get them above the dams. This proposal includes a fish ladder for upstream passage past Tacoma's diversion dam. This fish ladder goes immediately to a trap, holding, and transfer facility. [HCP, p. 4-35] The fish are then trucked to tributaries above HHD.

There is no data and no analysis in the HCP regarding Upstream Passage. There are no citations to other studies regarding Upstream Passage. The long list of references in Chapter 10 of the HCP contains nothing readily discernible as being related to Upstream Passage, although there are several references obviously related to Downstream Passage. There is no data and no analysis for Upstream Passage which includes a fish ladder to get fish past HHD. Tacoma and others have indicated that HHD, at 235' high, is too high for success in getting fish past the dam via a fish ladder. Tacoma and ACE say that such a
36 long fish ladder would be too expensive. Their position is that there are no other dams in Western Washington that are as high as HHD for which there is a successful fish ladder. Even if that were true, technology and understanding of the needs of anadromous fish continue to improve over time. Unsuccessful fish ladders may not have been unsuccessful if built with today's technology and understanding of fish needs. The City of Tacoma, Tacoma Public Utilities, Tacoma Power Division is studying changes to the Mayfield Dam on the Cowlitz

River, including a possible fish ladder on a dam which, at 188 feet high, is almost as tall as HHD, at 230 feet high. Considering that the relevant vertical distance should be calculated to the level of the reservoir and not to the top of the dam, the height difference between the two dams could be inconsequential. This fish ladder would include an adaptation to accommodate fluctuating levels of the reservoir where the ladder ends. Such an adaptation would also be applicable for HHD.

There is no data and no analysis of how well Trap and Haul would work when several anadromous fish stocks are making their way upstream at the same time. There is no
37 analysis of how many fish might actually be allowed to be trucked upstream given Tacoma's sensitivity to water quality considerations including taste and smell of drinking water from the Green River.

THE DAMS: DOWNSTREAM PASSAGE

Tacoma will work with the Army Corps of Engineers (ACE) to improve downstream fish passage at each dam, but, according to the "Tacoma HCP Draft Synopsis Comments of
38 WRIA 9 Technical Review Panel, March 2000," Tacoma estimates that the new passage system will still result in killing 36% of the chinook that try to pass downstream of HHD. A mortality rate this high does not bode well for Upper Watershed recovery

efforts and increasing of total Watershed habitat by opening up fish passage to the Upper
38 Watershed. This is especially true if Tacoma limits the number of fish from each species which may go above the dams.

The modifications to the two dams that are noted in the HCP carry no guarantee of improving substantially the survival rate. Also, improvements to the dams go with the Additional Water Storage Project (AWSP). The reservoir is currently enormous from a
39 juvenile salmonid's point of view. Since these fish evolved before the dams were built, they were not genetically programmed to find their way through a reservoir with its decreased flow rate, different water temperature, etc. This may be a major part of the problem with downstream passage. At present, there is not sufficient data to know fully what the problems are for downstream passage, despite much study of the problem.

ADDITIONAL WATER STORAGE PROJECT

The AWSP will more than double the amount of water stored in the reservoir at certain times of the year and make the pool even more difficult to get through than at present. Since the AWSP is a joint project of ACE and Tacoma, it needs to be considered in any discussion of Tacoma's EIS. The AWSP is for the benefit of Tacoma, since the
40 additional water storage would be almost entirely for Municipal Water Supply. The attempts by Tacoma to separate the AWSP from the City's HCP raises questions of responsibility, certainty, and comprehensiveness. Many of the conservation measures in the HCP rely on successful implementation of the AWSP by the Corps of Engineers. How can the public know whether successful implementation of the measures is certain to happen?

HATCHERIES

Tacoma's HCP informs us that Tacoma will help MIT build a new Hatchery. Then the City tells us that the Hatchery is really not part of the HCP. The Hatchery agreement with the Muckleshoot Tribe IS tied to the HCP, because it is tied to the Second Supply
41 Project, which Tacoma seeks to have protected from ESA "take" provisions under the ESA. Also, if the HCP does not get implemented, the Second Supply Project would be unlikely to go forward, and the Hatchery deal would not go forward, either. In any case, the Services should consider the proposed new hatchery in terms of Cumulative Effects because of the impacts of hatcheries, even with newest models.

The upper watershed should be reserved for natural production of wild fish stocks. Tacoma will assist the MIT with the hatchery and intends to outplant the hatchery fry into the Upper Watershed. Tacoma should not be increasing the likelihood of turning the
42 Upper Watershed into a hatchery fry rearing facility when this area may be the key to recovery for wild salmon. The Hatchery is very costly. It may or may not be ble to get the required permits. The Green River & its tributaries already have several hatcheries and certainly don't need another one. Hatcheries create problems for Wild fish. The new hatchery could:

-reduce salmon genetic integrity

-alter behavior of salmon

-increase harvest pressure on depleted wild populations

42 -displace wild salmon

-eliminate the nutrients from carcasses along the river

-produce fish which compete with wild salmon for food, etc.

Again, Tacoma is taking away from protection and restoration of wild chinook salmon and other wild stocks at the same time it proposes its own protection from "take" provisions in the ESA.

ALTERNATIVES ANALYSIS FOR FISH

Tacoma's HCP drags out 6 alternatives to the HCP's proposed Water Withdrawal that look like "straw dogs" and then proceeds to knock them down. Under Alternative 9.2.1 (No Action), Tacoma paints the following scenario:

--Tacoma doesn't get to withdraw additional water for water supply;

43 --Tacoma doesn't get to double the water storage at Howard Hanson dam;

--Tacoma therefore doesn't get to receive an Incidental Take Permit;

--Tacoma will run out of water in 1 year;

--The Corps of Engineers will be deprived of doing the Additional Water Storage Project.

But in a more realistic scenario, Tacoma would still need an ITP because it would continue to withdraw water from the Green River via Pipeline #1.

44 Tacoma would not run out of water for many years, contrary to the HCP at p. 9-2, line 38. Tacoma's own Draft Comprehensive Water Plan Update, released in December 1998, gave no indication of imminent danger of not having enough water to accommodate new customers. Water purveyors, especially major ones such as Tacoma, do not suddenly run out of water unexpectedly. They look ahead a minimum of 10 years. Tacoma Water's management has repeatedly indicated that they don't need the water from the Second Supply Project for a number of years. For the above document, Tacoma mentioned 22 alternative sources of water and listed a number of smaller untapped sources for additional water ready for use. Combining a few of those smaller sources such as aquifer recharge, with additional water from Tacoma's wellfields plus a big effort at conservation and water re-use, could keep Tacoma out of trouble for almost as long as the Second

Supply Project would. According to a January 2000 conversation with newly elected Tacoma City Councilman, Bill Evans, Tacoma has had very large debt problems recently.
44 Apparently to help get the City out of debt, Tacoma Water has been trying to set up contracts with small purveyors nearby to sell them water from Tacoma. The implication is that Tacoma has water it does not needs.

The Corps of Engineers would probably have to make changes to the dam structure and provide fish passage under the ESA, and would continue to add 5000 acre feet of water storage dedicated to fish needs (Sec. 1135 project). Tacoma is the Corps' partner in the
45 AWSP. The purpose of that project is to store water for Tacoma's Water Supply purposes. The Corps would have no reason to do the AWSP and suffer no loss if it no longer had a project to do based on Tacoma' s Water Purveyor dreams of being an ever more powerful player among local governments and water purveyors.

With the possible exception of Alternate 9.2.2, which might have some merit but needs a
46 study to be looked at seriously, the other Water Withdrawal Alternatives are meaningless. They seem to be in the HCP because something has to be written down.

The No Action Alternative is made to sound completely unviable in the HCP, but if Tacoma recognized the importance of working hard for recovery of ESA listed species and recognized the harm the City has caused by its activities in the Watershed for a hundred years, NO ACTION could be a viable Alternative. "No additional water withdrawal" is not bad for fish. It's true that Tacoma could refrain from enhancing instream flows if the City doesn't get it's "Preferred Alternative," but Tacoma could choose to protect those ESA species without insisting on an additional Water
47 withdrawal. "No Additional Water Storage project" is not bad for fish either. The Corps already got authority to do its Sec. 1135 Surcharge Storage of 5000 acre feet of water for fish flows in Summer and Fall, so it is not likely that fish would be impacted more by a realistic "No Action" Alternative than by Tacoma's proposal, which brings a number of negatives for fish: almost double the water withdrawal; more than double the water storage which makes the downstream passage through the reservoir more difficult and devastates any chance of mimicking the historical, natural hydrology of the river; a new hatchery bringing detrimental hatchery interlopers into the Upper Watershed.

The Alternatives presented in the EIS meekly follow what Tacoma sets up in the HCP. The EIs frets about the No Active Alternative but doesn't mention that the Corps already
48 has the authority to store water for fish to help alleviate possible problems. The EIS tries to do a better job of analyzing each Alternative than the HCP does, but does not seem to have all the necessary information and doesn't do the rigorous exploration and objective examination or include all Reasonable Alternatives as required by National Environmental Policy Act (NEPA).

Sierra Club proposes a real, reasonable Alternative which would include Water ReUse
49 and Conservation with reform of regional water rates to push citizens to conserve water. Conserved and ReUsed water are both considered by experts to be new sources of water. The existence of a "viable but unexamined alternative renders an environmental impact

statement inadequate." [Alaska Wilderness Recreation & Tourism v. Morrison (67 F.3d 723, 729 (9th Cir. 1995)]

WHY DON'T THE SERVICES REQUEST AN ANALYSIS OF A CONSERVATION, RE-USE, AND SMALL SOURCES ALTERNATIVE AS A WATER WITHDRAWAL ALTERNATIVE?

49 There is a great amount of information on Conservation and ReUse including data that could show how rates effect behavior and yield conservation. People in other countries may use a third of the water we use here. We need the Services to stand up for Fish and require Conservation. Such an Alternative would answer the Services' concerns noted at the bottom of page 2-1 of the EIS. It would meet Tacoma's objective of meeting current and future water demands, and would not require speculative information. The Services should contact the State Departments of Ecology and Health for further information on how far Conservation and Re-Use could go in meeting Tacoma's needs and those of the Fish Stocks in the Green River.

FISH PASSAGE ALTERNATIVES

Tacoma's HCP offers no Alternatives for Upstream Passage of Anadromous Fish but Trap and Haul. There is a lot of information about Downstream Passage in the EIS but almost nothing about UPstream Passage. Even the huge list of References lists nothing about Upstream and lots about Downstream. Strangely enough, Tacoma Power just happens to have data and an analysis of a possible fish ladder being added to the Mayfield dam on the Cowlitz River. The Mayfield Dam is up for review by another federal agency, the Federal Energy Regulatory Commission (FERC). FERC has decided to stand up for fish in recent years and is asking for serious retrofitting and even removal
50 of hydroelectric dams in some cases where only a small amount of power is produced and the dam is a major problem for fish. There is an EIS for the FERC review and a separate document called the "Draft 90% Fish Passage Study, Cowlitz River Hydroelectric Project, FERC No. 2016, May, 1999". The documents are in the offices of Tacoma Power next to Tacoma Water and probably at FERC offices as well. The documents deal with 4 dams on the Cowlitz. Sierra Club directs your attention to the Mayfield dam because it is almost as tall as the Howard Hanson dam. The study also mentions the Clackamas fish ladder in western Oregon as an "example of a long ladder that successfully passes adult migrants."

SHOULDN'T THE SERVICES "RIGOROUSLY EXPLORE AND OBJECTIVELY EXAMINE ALL REASONABLE ALTERNATIVES" FOR THIS HCP, AS REQUIRED FOR NEPA ? [40 CFR 1502.14(A).]

Tacoma's Proposed Green River HCP
Comments on Forests and Related Issues
Sierra Club, Cascade Chapter

March 31, 2000

Tacoma Water Department's Green River Habitat Conservation Plan provides a prime opportunity for the City to provide the best possible long-term protection of its lands, the water and the fish and wildlife dependent upon these resources. This opportunity will be missed if the City continues to rely on commercial logging of its forestlands in the upper Green River watershed. Ending logging and other improvements to the forest plan must accompany, not substitute for improved fish and flow provisions of the HCP, as addressed in other parts of these comments.

We object to a commercial logging program and the subsequent issuance of an incidental take permit by the US Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) for the six federally listed threatened and endangered species, one species proposed for listing, and 14 other unlisted species. The HCP fails to meet the requirements of the Endangered Species Act (ESA), 16 USC §§ 1531-1534, and for this reason alone, the permit request must be denied unless significant modifications occur.

The DEIS does not meet the requirements of the National Environmental Policy Act and its implementing regulations, 42 U.S.C. § 4331 et seq., 40 C.F.R. § 1500 et seq. The DEIS fails to adequately consider, evaluate, or document the direct, indirect, and cumulative effects of the destruction of terrestrial lands and evaluate or document how the considerable loss of habitat and lack of any mitigation measures will permit attainment of the objectives of the Endangered Species Act and other federal statutes and regulations.

51 The DEIS entirely fails to consider, evaluate, or document the environmental effects of fragmenting mature forests, isolating forest parcels, and eliminating critical wildlife habitat in the watershed. Impacts to species dependent on terrestrial environments are wholly impossible to determine as survey information is lacking or insufficient. The amount of "take" and effectiveness of measures to minimize and mitigate "take" are equally impossible to determine.

Our analysis indicates that the HCP fails to meet the requirements of the Endangered Species Act (ESA) and associated regulations. Consequently, we recommend the incidental take permit for City of Tacoma lands be denied unless the HCP and EIS are significantly modified or the no-commercial logging alternative is deemed the preferred alternative. Furthermore, as the HCP process relies heavily on the accurate application of scientific information, we recommend that future iterations of the HCP be reviewed and evaluated by an independent panel of academic and agency scientists, and by a citizen review board.

In summary, the following issues must be resolved:

Process and Documents

1) Quantifiable data and resource objectives lacking

According to ESA regulations and rules, the HCP must "include specific biological goals and objectives...." for measuring the effectiveness of conservation planning. In addition, biological objectives represent "...specific measurable targets for achieving the goals of the operating conservation program." (Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take

Permitting Process." Federal Register, 64;45, March 9, 1999. Biological goals must correspond to full mitigation of impacts to the species, minimization and mitigation of impacts to the maximum extent practicable, and species' recovery needs, and other basic impact minimization and mitigation standards.

The Tacoma Water HCP fails to establish measurable biological goals for recovery, and for measuring "take" minimization and mitigation. Generally, the HCP's resource goals are extremely vague, unverifiable, and unenforceable. The HCP fails to consistently discuss how the HCP and ITP and their resulting habitat conditions, population levels, and other outcomes will relate to the biological goals and standards proposed in available scientific literature. The HCP also fails to provide adequate quantitative analyses or other analyses of how impacts to most of the covered species will affect survival and recovery.

Sierra Club et al v. Bruce Babbitt et al found that current data on species' conditions and recovery needs must be used; goals included in recovery plans are not sufficient if conditions have changed since those plans were written. Civil Action No. 97-0691-CB-C, Order August 4, 1998, S. Dist., AL, S. Div. The HCP and DEIS fail to meet these requirements. The HCP generally fails to identify species population levels and habitat conditions that would correspond to genuine recovery across the species' ranges, and fails provide concrete quantitative assessments of how the populations and habitat conditions stemming from the ITP and HCP will compare to these recovery standards.

Without quantifiable objectives, there are no substantive provisions that allow for monitoring effectiveness of prescriptions, and adjustments through adaptive management.

51 2) Proposed baseline is inappropriate

Tacoma Water proposes using current conditions as a baseline, yet much of the terrestrial wildlife habitat necessary for supporting listed and unlisted species is highly degraded from poor land use practices. Consequently, the HCP will not reduce the risk of extinction to many species, including those requiring snag habitat, small streams, intermittent streams, and other habitat for survival and recovery unless considerable restoration of wildlife habitat is conducted.

3) Best available scientific information not employed

NEPA and ESA section 7(a)(2) and the Act's administrative rules require agencies to use the best available science. The HCP does not apply or consider the best available scientific information.

The HCP employs arbitrary rationales for thinning as a method for "accelerating" old growth conditions, completely unsupported by any scientific evidence. Throughout the draft EIS/HCP, there is discussion of the benefits of specially designed treatments to accelerate the development of old-growth conditions. However, no context is provided along with these statements. For example, what are the specific criteria which will be used to determine whether a stand needs to be "ecologically thinned"? What evidence are these criteria based on?

Creating old-growth through thinning has yet to be done. Studies show that there is no evidence that the thinning of stands 30 years or older results in any net ecological benefits[1]. The concept that one can "accelerate" old-growth conditions by thinning remains largely an untested assumption. Therefore, it should not be the primary basis of an old-growth restoration strategy. Furthermore, for an activity whose long-term benefits are unclear, thinning is an expensive experiment.

[1] Carey, A.B. (1999, November) Biodiversity and Intentional Management: A Renaissance Pathway. Science Findings, PNW Research Station, issue 9, p. 3

4) Adaptive management provisions will not allow for needed changes in management

The Tacoma Water HCP fails to provide an adequate effectiveness monitoring program to provide for adaptive management changes. Given that the HCP is for 50 years, adaptive management provisions must be substantive and effective.

Sufficient vegetation and wildlife sampling must be conducted to establish monitoring trends and the presence and distribution of species across the landscape. As proposed, the HCP will only train Tacoma employees in the identification of covered species, in the event that a species is sighted, leaving the discovery of a covered species completely to chance. This method will provide no accurate data as to the presence or absence of a covered species over the life of the HCP, and render any meaningful adaptive management provisions useless.

The HCP's compliance and effectiveness monitoring must occur frequently over time, including monitoring of species' populations and reproduction, habitat quantity, habitat and specific habitat components, habitat trends, and other goals and indicators. The Tacoma Water HCP has failed to do this.

5) High Standard for ITP

ITPs and HCPs should only be used in limited circumstances. The ITP and HCP should not be used to eliminate or degrade habitats across significant portions of the landscapes, ecosystems, or species' remaining ranges. Likewise, ITPs and HCPs should not be used where more effective alternatives exist. The no-commercial logging alternative is clearly a more effective alternative to the proposed action.

51

The Services must consider this alternative seriously, especially in light of the fact that City of Tacoma has provided no justification for commercial logging in their statement of purpose and need. Furthermore, no alternatives to revenue generation have been evaluated by the City. The ESA standard of minimizing impacts and providing mitigation to the maximum extent practicable has not been met.

It is essential to maintain late-successional forest habitat needed by several listed terrestrial species and to protect the upper Green River and its tributaries for fish habitat. The standard for an incidental take permit is far higher than for the state Forest Practices Act or Tacoma's current Forest Land Management Plan. Pursuing the goals of the Endangered Species Act, especially recovery, must be the driver in this HCP, not commercial logging.

6) No Surprises still a problem

A 50 year incidental take permit is too long given the no surprises policy. Either a shorter permit period or greater ability to modify the HCP to improve habitat conditions should be established. The current permit provides great amount of certainty to Tacoma, but great uncertainty to the public's fish and wildlife. This is not an equitable agreement, and must be changed.

Forest Management

1. Management Zones

Tacoma Water owns 10.1% of the land in the Upper Green River Watershed (14,888 acres), primarily along the banks of the Green River. Under the proposed HCP the existing Management Plan will be retained with few changes. The current forest management plan appropriately eliminated "maximizing" timber volume in the commercial zone. This HCP should eliminate the commercial logging altogether.

Thirty-nine percent of the area (the Natural Zone) will have the highest level of protection and no logging. Another 35% (the Conservation Zone) will sustain some amount of thinning of forests. The conservation zone is designed to develop into late-successional stage habitats. When this occurs the plan indicates logging will cease. While we certainly support the objective of ending the logging, again, we urge caution in manipulation of the vegetation to achieve the desired result. Only in areas recovering from recent clearcutting should be considered for thinning operations.

Twenty-six percent of the land (the Commercial Zone) will be used for "producing merchantable timber". The revenues created from these practices will be used in watershed land acquisition, forest management, fish and wildlife habitat and water quality enhancement projects. Such logging activities place a priority of commercial interests over water quality and habitat protection no matter how many environmental precautions are taken.

Any management activities in the protected zones should receive careful scrutiny plus public involvement for significant actions. Salvage logging is of particular concern.

2. Ecological Risks

While some public officials assert that commercial logging will not harm water quality or wildlife habitat, there is much evidence to the contrary. Forests act as giant air and water filters, and also act as reservoirs by increasing water yields in the crucial dry months and reducing flooding in wet months. Preserving those forests diminishes the need for Tacoma's turbidity pool and flood control storage volumes as well as the AWS (Additional Water Storage) project.

51 Logging can produce massive imbalances in the natural soil-forming and erosion cycles, increasing levels of sediment in our drinking water. Tacoma's lands, bordering the Green River, are some of the most vital for water and habitat protection, thereby increasing the need for preserving those forests.

3. Illogical Economics

Funding land acquisition and restoration efforts through commercial logging may establish an illogical economic model. Causing damage to repair damage does not make sense. The long-term costs of repairing ecological damage associated with logging far outweigh the short-term financial benefits (e.g., water filtration costs, landslides, road repair, etc.). Alternatives other than logging revenues, to fund the acquisition of lands in the watershed need to be explored. Timber markets are unpredictable, making logging revenues as a funding source a risky practice. We believe that when all of the above factors are considered (and they must be considered) it will be apparent that commercial logging doesn't economically benefit the community.

4. Forests & Wildlife

The Green River watershed has been heavily roaded and logged, with resulting impacts to the native forest ecosystem. Tacoma now manages important wildlife and fish habitat which includes significant late-successional forests. Full protection of these forests is the best assurance of maintaining high water quality and sustaining fish and wildlife populations. The Forest Service has stressed the importance of connectivity in late-successional forests through the checkerboard lands that include the Green River. While the current plan objectives attach greater importance to wildlife and fish habitat than earlier versions, it still fall short of that needed for the conservation and recovery of endangered species.

5. Wildlife Species

Many species will be adversely impacted by the proposed action. Those dependent on late-successional forests, including salamanders and other amphibians will be impacted the most. Acquisition and preservation of forests adjacent to the City's ownership could offset the impacts of the reservoir, logging,

roadbuilding and other impacts of Tacoma's operations. Rock Creek, Sawmill Creek and Eagle lake would be good choices. A few examples illustrate the flaws of the draft HCP.

Marbled Murrelets
Tacoma owns lands in Rock Creek near where marbled murrelet nesting was found last summer. However, Tacoma proposes to continue logging in that area (Commercial zone). The HCP must reverse the trend of loss of habitat, and require restoration of murrelet nesting habitat in this area. Merely promising not to destroy murrelet nesting habitat is not sufficient for a 50 year ITP. Further monitoring for murrelets in the old-growth grove in Sawmill Creek should also be done.

Spotted owls
The Services cannot become complacent about this species whose population continues to dwindle. Spotted owl critical habitat units and state SOSEAs have been established in the Green River Watershed, underscoring its significant role as nesting habitat and dispersal habitat for the Cascades population. It is acknowledged as a critical connectivity corridor between the north and south cascades for many species, including the spotted owl. Given the degraded state of the forests in this area, USFWS cannot grant ITPs to destroy additional habitat here.

Northern Goshawk
In reviewing the conservation strategies developed for listed species, we would like to raise concerns regarding the lack of information and studies on the northern goshawk. Northern goshawks are highly sensitive to human disturbance. Unbroken canopy of second-growth forests in the lower watershed provide important habitat for goshawks.

51 Given the lack of information, the goshawk's sensitivity to disturbance, and the importance of second-growth lowland habitat, we question whether the potential impacts of the proposed action to the goshawk have been understated. The main basis for the net improvement to goshawk habitat as stated in the draft HCP is the ecological and restoration thinning of second-growth forests and long-term regeneration of forest habitat. We again question the actual long-term benefits of thinning, given that the practice is still considered experimental. Thinning is not adequate enough to use as a primary conservation measure for goshawks. We also question the baseline used in making this assumption (see: Proposed baseline is inappropriate).

We encourage the Services to deem the no commercial logging alternative as the preferred alternative to reduce disturbance in the form of timber harvest and road usage. The no commercial logging alternative would have the greatest positive effect for the northern goshawk, however, nowhere in the EIS is this stated. The EIS must be thorough and accurate in representing the benefits of each alternative.

Pacific Fisher
According to the Washington Department of Fish and Wildlife Status Report on Fisher (September 1998), fishers use forests with a high percentage of canopy closure, abundant large woody debris, large snags and cavity trees, and understory vegetation. While fishers are associated with late-successional conifer forests, they also use younger stands, especially
as foraging habitat. Furthermore, the majority of fishers in western Washington tend to be found in areas less than 1800 m in elevation.

Since the majority of Tacoma Lands within the watershed are less than 1800m, they provide the best long-term opportunities for habitat recovery for the fisher. However, Tacoma's claim that fisher habitat will improve under the proposed action is questionable. The HCP states that it "will have positive effects on the Pacific fisher by reducing disturbance to denning fishers, increasing riparian protection, and

managing for late successional conditions; but overall the positive effect will be minor because few, if any, fishers are likely to occur in the HCP area."

Once again, Tacoma is claiming to create late-successional/old growth habitat through thinning with no scientific evidence that forests will be benefit from such treatments. Nowhere in the HCP does the Tacoma address the risks of thinning, such as windthrow. Thinning stands can expose them to wind, causing excessive windthrow and excessive opening of the canopy.
How could this affect fisher habitat? Tacoma also does not discuss how entering younger stands will affect fisher foraging habitat.

Lastly, how can Tacoma claim that if the fisher "does inhabit any portion of the HCP Area, it will occur only in small numbers in the upper watershed" without any reference to surveys conducted in the past or to be conducted in the future. Tacoma cannot rely on chance sightings as an accurate indicator of species distribution across the landscape. If Tacoma
is to adequately provide for the protection and, most importantly, the recovery of fisher in the Green River Watershed, Tacoma must actively monitor for species' populations and reproduction, habitat quantity, habitat and specific habitat components, habitat trends, and other goals and indicators. The proposed action alone is not sufficient to achieve recovery of the fisher in the watershed. We believe that the no-commercial logging alternative provides the best and most practicable option for fisher protection and recovery.

51 6. Unroaded Lands

The unroaded areas left in the watershed are extremely important. These ecological anchors are the largest blocks of intact forest, the most undisturbed streams and provide the greatest security habitat in the watershed. These include Kelly Butte (~14,000 acres) and two smaller areas (Friday Creek, McCain Creek) north of the Green River where the city owns land. Much of the former was protected by Congress when it established a Kelly Butte Special Management Area on the national forest lands in Lester, Sawmill and Rock creeks. This provides a core area for late-successional forest species conservation, but is not sufficient by itself. Plum Creek is aggressively logging its lands, adding to the importance of protecting forests on Tacoma lands.

While some of Tacoma's unroaded lands are allocated to the natural zone, we are still concerned with the proposed logging and roadbuilding in and adjacent to the Kelly Butte roadless areas. The lands remaining in the commercial zone between the Green River and Kelly Butte (sections 24, 19, 20) should be managed to restore a natural forest and eventually included in the natural zone. In the interim, designation of this area in the conservation zone would provide the flexibility to do the restoration work, with the clear objective of re-establishing late-successional forests in an unroaded condition. Additional areas in Champion Creek (section 28), Rock Creek and near Eagle Lake should be treated the same way. The unroaded lands along the Green River (sections 21, 27) should be designated to provide the maximum protection possible with the goal of acquisition of the timber rights as soon as possible.

7. Roads

Roads cause major problems for both fish and wildlife. No new roads should be allowed under the HCP. Even well designed and constructed roads will increase sedimentation and impact wildlife (see FEMAT report) by destroying and fragmenting habitat. The basin is so heavily roaded that it has caused incredible impact to both terrestrial and aquatic systems.

We strongly support the decommissioning of roads, especially in the area between the Kelly Butte Roadless Area and the Green River. A significant portion of the road mileage on Tacoma's lands is not needed for administration or access to other owners. These should be obliterated as soon as possible. Ten

years should be more than adequate. No additional road access to other ownerships should be granted by Tacoma across its lands.

8. Watershed Analysis

We are pleased that Tacoma will be participating in the watershed analyses scheduled for the basin. The federal watershed analysis has been completed and describes a seriously degraded watershed, with extremely high road densities and little late-successional forest. It is regrettable that the analyses prepared under state rules are limited to physical factors and direct impacts on fish. Cumulative effects are poorly addressed and the analyses do not consider terrestrial species or indirect effects at all. The City should insist that these other issues be addressed in these watershed analyses.

9. Riparian

Full protection of the riparian zones is critical to the success of the forest plan and HCP, the recovery of the salmon and other fish of the watershed and maintaining high quality water. While the proposed stream buffers (riparian management zones) were an improvement over the minimal state forest practices standards they are still far below that recommended by federal scientists (FEMAT report). Again, eliminating commercial logging will avoid these problems. There should be no further road building in any riparian zone, and an aggressive decommissioning of roads there commenced.

10. Timber Management

The current plan allows considerable commercial logging. The conservation zone still has a 100 year harvest cycle for the conservation zone, with annual harvest acreage of 80 acres. While contiguous even-aged (clearcut, shelterwood) units at 40 acres are below state standards, these practices should be eliminated entirely.

51 The deferral on logging the recently acquired federal lands in the natural zone should be permanent. We have also encouraged the City to acquire the timber rights held by Plum Creek along the Green River as soon as possible, especially in the Kelly Butte roadless area, to implement the Utility's conservation strategies.

Alternative B strategies go to great lengths to try to mitigate for the impacts of additional logging and road building. Most of these would be moot if the HCP just eliminated commercial logging on the City's lands in the watershed. For example, salvage logging for safety near roads would be unnecessary if the road no longer existed. Standards for restoration projects could be patterned on the Seattle's Cedar River Watershed HCP.

Proposal: Alternative C modified- No Commercial Logging, Reduced Roads

We propose that the USFWS and the City of Tacoma adopt a "no commercial logging" standard as reflected in Alternative C, with some modification. This alternative should be amended by a provision of no new roads, and specifying substantial road decommissioning. The list of mitigation measures for individual species, under Alternative C (Table 2-18b) appears to allow considerable development. This should be curtailed. Acquisition and preservation of additional forest lands should be required to mitigate for impacts of Tacoma's facilities and operations that have destroyed or degraded late-successional forest habitats for any species noted in the HCP.

The entire land base, other than under the power lines, should be allocated to the natural zone. In recently clearcut areas that are currently in the commercial zone, short term use of the conservation zone prescriptions might be used. These thinning operations in "plantations" should end within five years, and road obliteration commenced in those areas.

Even with the minimum standards established in the plan, the adaptive management approach will require a high degree of caution in order to adjust the forest management and mitigation to address unforeseen circumstances. Monitoring the early management activities is essential to determine if they are providing the benefits expected within the limits of environmental impacts allowed.

Public involvement should be actively solicited for any watershed activities, including restoration
51 projects. The HCP should establish an accountable process for citizens to become involved in decision-making for the watershed *before* plans are realized.

Tacoma can and should develop and implement creative funding alternatives that do not include such destructive activities as commercial logging. Many alternatives could be considered, for example:

- a minimal rate increase
- adjusting rate structures (e.g., adding additional higher priced tier for high summer use)
- a summer surcharge for commercial customers
- corporate donations

RECREATION AND AESTHETIC (VISUAL) RESOURCES

The Sierra Club is not only an environmental organization but also has a long tradition as a recreational organization. Enjoyment of the Outdoors -- the Natural Environment -- through hiking, boating, fishing, swimming, camping, mountain climbing and other activities leads many of Sierra Club's members to a commitment to protect the Natural Environment. Awareness of the importance of the Outdoors for renewal of the spirit permeates the programs of the Sierra Club.

52 The Green-Duwamish Watershed contains many beautiful places and many locales which are used for a variety of recreational activities in a Natural setting. Many of those places are close to the river, because the presence of flowing water enhances the beauty, tranquility, and spirituality felt by those who seek out such places for Recreation and renewal.

Both the Draft EIS and the DHCP recognize to some extent the beauty and recreational value of the watershed, the importance of it for recreational purposes to citizens of the region and the fact that some aspects of the HCP and of Tacoma's uses of it impinge on recreational and aesthetic enjoyment and use of the watershed.

UPPER GREEN RIVER WATERSHED

As noted in both the DHCP and the DEIS, the entire Upper Green River Watershed is for the most part closed to recreational use. This closure has been in effect for many years because Tacoma considers the presence of the public to be a threat to the water
53 quality of its municipal and industrial water supply. Logging operations, including their human component, have been allowed to continue relentlessly, however, on both public and privately owned lands. Recreation is banished from public lands owned by federal and state agencies as well as timber company lands and those of Tacoma, at Tacoma's request.

Sierra Club takes the position that there should be some access to parts of the Upper Watershed. There are areas far from the Green River and even farther from Tacoma's water diversion where people could access US Forest Service trails if Tacoma
54 would facilitate linkages to assist people in getting to those trails. As partial mitigation for the loss of recreational use of lands in the Upper Watershed which don't even belong to Tacoma, Sierra Club requests that Tacoma add to other mitigation efforts by adding such linkages, enabling additional recreational use in the Upper

Watershed.

MIDDLE GREEN RIVER WATERSHED

Recreation and Visual Resources in the Middle Green River Watershed are very important to the Region. State Park lands run along a large part of the Green River from Kanaskat-Palmer State Park to Flaming Geyser State Park. A number of trails run through the State Park lands. These lands are used by Hikers, Picnickers. Swimmers, Inner-tubers, Boaters, Wildlife and Bird Watching, Fishermen, and Campers.

Recreation and Visual Resources in the Middle Green River are impaired by the current large (113 cubic feet per second) withdrawal of water from the river for Tacoma's Municipal Water
55 Supply. They are further impaired by the operation of the US Army Corps of Engineers' Howard Hanson dam (3.5 miles above Tacoma's diversion dam. They will be further impaired by Tacoma's proposed Second Water Supply Project's withdrawal of an additional 100 cubic feet per second (cfs) and by Tacoma's plans (with the Corps of Engineers) to double the amount of water stored in the reservoir behind Howard Hanson dam for Municipal Water Supply. Such drastic changes to the hydrology of the river not only impair the fish and wildlife of the Green-Duwamish Watershed, but the people who need the Recreation and Aesthetics of the Watershed.

Probably most affected of the recreational users of the
56 Watershed by such changes in the hydrology of the river are the Fishermen who prize wild salmonids, for these species are in trouble and need their historic natural flow regimes. Also highly impacted are Canoeists, Kayakers, Rafters, and other boaters who can be found on all of the reaches of the river from their first access point below the Tacoma diversion dam to the mouth of the Duwamish River. And most affected
57 of these are the whitewater boaters -- Rafters, Kayakers, and Canoeists – who love to run the Green River Gorge. This is the case because the Green River Gorge is sensitive to flow levels. The whitewater boaters require a substantial flow to make it safely over the rock ledges in the river bed and between the boulders scattered in the river.

At this point in the river's trip to Elliott Bay, it is a small river
58 which has been made even smaller by the loss of a substantial portion of its natural flow due to Tacoma's water diversion and

to operations of Howard Hanson dam including the time when the river is not flowing at its natural level because the Corps of Engineers is reducing the flow in order to fill the reservoir behind it with water saved for Tacoma's Water Supply in summer and fall when there is little rain.

58 Whitewater boaters need water in the river just as salmonids do. Taking more water out of the river for Tacoma's water supply is contra-indicated for both. Additional Water Storage for Tacoma's water supply also negatively impacts both. Sierra Club's position is that Tacoma should not be allowed to do either of these high impact activities under the aegis of an HCP which has only one purpose: protection and restoration of the species in the Watershed, including the salmonids Tacoma suggests should be covered by the HCP and the ITP.

If an HCP is ultimately agreed upon, it should include additional mitigation for recreation losses in the Middle Green, particularly losses for whitewater boating. Tacoma and the Corps of Engineers cannot predict what the reality is for Spring refill of the reservoir behind Howard Hanson dam. Doubling the amount of water storage means that flows will be less than what would naturally occur for a longer period of time. That means loss of "boater-days."

59 For the myriad of whitewater boaters who flock to the Green River Gorge whenever the river is running at a high enough level to provide a reasonably safe trip, there are gage levels which are decision points for them. Depending on their level of confidence on any given day and their expertise, boaters decide not to run the Green River when the flow is below (or above) a certain point. For most rafters, that gage point is when the river is running at less than 1300 cfs at Kanaskat-Palmer, or more than 4,000 cfs. For kayakers and canoeists, the range at which they prefer to run the river is 1,000 cfs to 3,000 cfs. Because different boaters have different decision points, it's not "All boaters are on the river if running at 1300 cfs, all boaters are off the river if running at 1150 cfs." The question is how many boaters are on the river when it is running at 1150 cfs and how many decided not to boat the Green River that day. How many boaters are on the river when it is running at 1250 cfs and how many decided not to boat the Green River? And so forth. So, the concept of "boater days" would provide data on how changes in flow affects how many boaters are on the river on any given day.

60 By doubling the storage of water behind the Howard Hanson Dam, whitewater boating opportunities could be gone much

earlier in the Spring, relegating the Green River's availability to boaters to not much more than the Winter months. The Green River Gorge is deep enough that in many places not much sunlight penetrates. Many whitewater boaters give up on the
60 Green River Gorge in the Winter because it is too cold. Cold hands make it hard to paddle or row. Cold in general can lead to hypothermia. That condition with its impaired thinking and reduced body movements can impair boater safety. The impenetrability of the Gorge in many places makes aborting the trip and leaving the Gorge difficult if necessary.

The Green River also supports commercial rafting guide service businesses. With Tacoma's plans to divert an additional 100cfs of
61 water from the Green River and to double the amount of water storage in the Howard Hanson reservoir, lower flows in the river will adversely affect this industry. Loss of commercial and non-commercial whitewater boating can have an economic impact on the small towns near the Green River Gorge.

Tacoma must mitigate for recreation impacts by being required to buy additional forest lands, with no logging subsequently allowed
62 on them, to improve the hydrology and thereby the instream flows which would enhance the likelihood of recovery of salmonids and would help mitigate for impacts on recreation.

Tacoma must also mitigate for its impacts on Recreation by working with the Corps of Engineers to keep flows as high as possible
63 throughout the year, with the possible exception of untoward events which would cause major flooding downstream where people have been allowed to foolishly build on the floodplain.

Additionally, Tacoma must, with other regional water suppliers, implement regional water rate reform. This would mean that block rates are adopted for all seasons. The first block of water would be low cost but the number of gallons received at the low rate would
64 make consumers put in an effort to conserve water in order to avoid having to pay the higher rate at the next block level. There has to be a high enough rate at the second and subsequent blocks to give people an incentive to save water. The effect of implementation of such water rate reform over the Tri-county area (King, Pierce, and Snohomish Counties) would mean 30-40% more water would be available for instream flows and for municipal water supply.

LARGE WOOODY DEBRIS

65 Tacoma and the Corps of Engineers plan to add Large Woody Debris to the river to help create certain kinds of habitat for fish.

According to the Corps of Engineers, much of the LWD will be put into the Green River shortly below the Tacoma dam and allowed to flow down the Green River as it might if the dams were not obstructing its course from forested lands to some downstream permanent or temporary resting place. Other techniques have been tried by King County, such as ramming tree trunks into river banks with the root wads sticking out into the river. At times such arrangements are anchored with chains, etc. Typically, such installations have been used in bank stabilization programs, often where levees have been constructed along lower reaches of the river and are now slumping. Bank stabilization is most
65 often needed on outside bends in the river because the current slams into the bank on such bends. Unfortunately, an inadvertent swimmer, a child in an inner-tube, an inexperienced boater in trouble will also be swept into the bank on an outside bend. If Large Woody Debris is used there, people can get snagged on it and die. Large Woody Debris has a hard time staying put in such a location anyway, and often such a location is not the best one for placing Large Woody Debris to slow the water's flow and create a resting place for fish. Boaters have concerns about Large Woody Debris programs without input from boaters on specific installations.

Sierra Club agrees and requests that Tacoma and the Corps of Engineers establish such an Advisory Committee.

FINANCING THE HCP

Chapter 8 of the HCP states that Tacoma's cost for the HCMs are $15,461,000 (table 8-1). A closer look at the HCMs and removing items that are either State regulatory requirements or BMPs results in an estimate of less than $3,000,000 for the mitigation package. This estimate averaged over the 50 year period of the HCP results in a cost of less than $60,000 per year. This is especially unimpressive when considering the total 213 cfs that Tacoma wants to take from the river, the incidental take of endangered and threatened species, and resulting revenue which Tacoma hopes to secure over the same 50 year period.

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Using only the information available in the HCP, the following categorical estimate was made:

Of the first category of HCMs (HCM1-01,02,03,04,05) which are designed to compensate for impacts resulting from Tacoma withdrawals, only the upstream fish passage and downstream bypass facilities at the Tacoma headworks dam (5.5 million dollars total) and a minor amount of wood placement (10K dollars) result in a cost to Tacoma. The primary mitigation tools of minimum instream flows and seasonal constrictions have no cost under normal conditions. The upstream and downstream fish facilities are a requirement per State Hydraulic Code: dams to be provided with an efficient fishway (RCW 75.20.060) and water diversions to be screened (RCW 75.20.040). These should not be considered conservation measures.

67

Estimate of Total Real Cost HCM 1: $10,000

The second category, HCM 2 is mitigation for non-Tacoma actions (i.e., gravel replacement for Howard Hanson Dam's supply interruption). It was surprising to see that two of the most important mitigations, the downstream passage at HHD and gravel nourishment, has no cost to Tacoma. The 300,000 dollar cost of juvenile salmonid transport and release is not considered a conservation measure as it is tied to the MIT agreement which is therefore hatchery fish dependent and probably detrimental to the recovery of wild salmonids. The two remaining measures that incur a Tacoma cost are low flow augmentation ($400,000) and wood debris management ($500,000).

68

Estimate of Total Real Cost HCM 2: $900,000

The HCM 3s are for non-water withdrawal impacts of the HCP (e.g., forestry operations).

Most of the 7 million dollars of cost Tacoma reports in this category are for the forest management practices including road maintenance. An undisclosed percentage of the cost is for lost revenue. Most of the measures appear to be a combination of current BMPs and forest regulations (e.g., no logging in riparian buffers which are already

69

protected by current forest regulations and Shoreline Act).

Estimate of Total Real Cost HCM 2: $2,000,000

69

Total $2,900,000

Annual Total 60,000

70 The remaining comments focus on financial opportunities that Tacoma Public Utilities (TPU) has to finance the protection and restoration elements of the HCP. These comments are based on financial statements of TPU's Water Division 1998 Annual Financial Report as well as information on watershed management (City of Tacoma's Green River Watershed Forest Land Management Plan July 1, 1996), timber revenues and costs provided in response to information requests. Tacoma should increase its system development charges to pay 100% of the costs of system developments. This will create rate equity whereby new ratepayers are paying for the costs to serve them and will allow funds to be spent on environmental protection and restoration in the Green River.

71 Tacoma should ensure that revenue collected for depreciation costs are used to either pay down debt or fund capital projects. Otherwise, future ratepayers will be saddled with a financial liability and/or debt burden and a system that requires major capital overhaul. To provide an additional incentive for water conservation, TPU should collect depreciation funding through a summer rate surcharge. All customer classes should pay a summer surcharge to fund conservation measures.

72 In general, Tacoma should pay for the HCP by increasing rates. It is the ratepayers of Tacoma who have not paid the real cost of water for almost a hundred years that must step up now and take care of the salmon and other species that have suffered for the failure of Tacoma to have ratepayers pay the true cost in the past. Tacoma should in no part, be paying for the costs of protection and recovery of salmon and other species by cutting trees and selling them. It is totally unacceptable to pay for the costs of Tacoma's impacts on Salmonids and other species and for restoration efforts for those species by cutting down trees which contribute to the recovery and protection of them. Rather than logging trees on Tacoma's lands, Tacoma Public Utilities should be spending money to buy other parcels of land in the Upper Watersbed to increase the City's percentage of ownership of the Upper Watershed and the number of trees protected from logging.

73 Tacoma must work with other regional water suppliers to implement regional water rate reform. This would mean that block rates are adopted for all seasons. The first block of water would be low cost but the number of gallons received at the low rate would make consumers put in an effort to conserve water in order to avoid having to pay the higher rate at the next block level. There has to be a high enough rate at the second and subsequent blocks to give people an incentive to save water. The effect of implementation of such water rate reform over the Tri-county area (King, Pierce, and

Snohomish Counties) would mean 30-40% more water would be available for instream
73 flows and for municipal water supply. A surcharge should be added for Summer and Fall when supply is low and Demand is high, of course.

CONCLUDING REMARKS
HABITAT CONSERVATION MEASURES (HCM)

The following is a synopsis of some of the more important points regarding the HCMs.

HCM 1-01 North Fork Well Field

74 The North Fork Green River is the largest tributary to the Green River in the upper watershed and the wells can dewater the system from river mile 1.5 to 0.0. The stream is currently used by resident species and some outplanted salmon. The North Fork is expected to be one of the most important tributaries in the upper watershed for salmon recovery. This is a serious threat to existing salmonids and potential recovery efforts. The wells are

75 "used approximately 11 days per month between November and May" (page 7-35, line 2,3) and an undisclosed amount of time outside of that monthly range. Salmon of certain species or life stage will be present in the river at all times of the year. There is not enough information disclosed within the HCP

76 regarding North Fork Green River flows and their response to pumping to justify incidental take coverage for 50 years within the HCP.

77 The measure (HCM1-01) is obviously a last minute attempt to gain coverage for a poorly conceived conservation measure. This attempt to mitigate a severe impact did not even merit it's own HCM but was "tacked-on" to a previously written measure dealing with minimum instream flows to the Green River. The measure is only a study to identify the maximum rate of pumping

78 that will maintains a stage reduction of no more than one inch per hour. This rate is still capable of stranding salmon, stopping migration, desiccating eggs and completely dewatering eggs.

Solutions:

79 Commitment to use Tacoma's other groundwater supply before the NF wells should be a measure that could be initiated immediately but would not be enough on its own. The wells may still be needed although less frequently.

80 Alternative analysis that could produce a method that doesn't impact surface flows, e.g., new ground water source.

81 The ultimate solution is turbidity filtration of Tacoma's water supply, therefore making the wells obsolete. Tacoma mentioned that this may be a future requirement, therefore the only additional cost would be to expedite the filtration system.

82 Treatment at the source: If most turbidity is due to forest practice activities, Tacoma should be considering a long term comprehensive acquisition program for the upper basin. The forest land could then be

82 preserved for multiple resource restoration objectives besides curtailing turbidity.

HCM 2-01 Howard Hansen Dam (HHD) Downstream Fish Passage Facility

A measure to provide safe, efficient downstream juvenile fish passage through HHD may be the single most important project for the recovery of salmon on the Green River. Although HCM 2-01 attempts to address the passage issue the device needed at this dam will be experimental and is not yet considered a proven method. In addition, the device is estimated to result in a 36% mortality rate for chinook. An instantaneous mortality rate this high will seriously reduce the likelyhood of success for any recovery effort in the upperwatershed. The standard for survival needs to be raised
83 significantly and the current estimate should not be considered adequate, especially over the 50 year duration of the plan as technology advances.

Solution

If it is a matter of cost to increase efficiency, it should be spent. If today's state of the art engineering resulted in this amount of impact, the job should not be considered complete. Tacoma and the ACE should be tied to substantial financial commitment to research and development for an improved passage device until mortality can be lower to acceptable levels.

HCM 2-05 Juvenile Salmonid Transport and Release

This conservation measure describes the Tacoma funding for a MIT hatchery and provides the transportation for the hatchery juveniles to the upper watershed. Even though Tacoma downplays its association with the hatchery by claiming it will be permitted under a different process it does intend to move transport the hatchery fish to the upstream of HHD. These two activities could be in direct conflict with the Services HCP criteria for
84 ITP issuance- "the taking will not appreciably reduce the likelyhood of survival and recovery of the species in the wild". King County sees the upperwatershed as one key to wild salmon recovery in the Green river and the perpetuation of a hatchery stock could impact recovery in the wild by:

* Reduce salmon genetic integrity

* Alter behavior of salmon

* Increase harvest pressure on depleted wild populations

* Displace wild salmon

84 * Eliminate nutritive carcass contribution

Solution:

Eliminate HCM or any other Tacoma action that could initiate hatchery management of the upper watershed, use funds to truck salmon adults upstream of HHD.

Wildlife Conservation Measures (All)

There are significant information gaps in the HCP assessment of impact on wildlife and it is reflected by the inadequate conservation measures. This is especially true when compared with the amount of attention the HCP focuses on fish.

85

Solution: due to the inadequate assessment and long period of take requested, wildlife should be given all the attention it needs before release of the next Draft of the HCP. If it's deemed necessary, the Wildlife aspects could be separated from the HCP and dealt with in another permitting effort.

CUMULATIVE EFFECTS

86 The DEIS does not meet the requirements of the National Environmental Policy Act and its implementing regulations, 42 U.S.C. sec. 4331 et seq., 40 C.F.R. sec. 1500 et seq. The DEIS fails to adequately consider, evaluate, or document the direct, indirect, and cumulative effects of the destruction of the ecosystem throughout the Green-Duwamish Watershed for ESA listed and non-listed fish stocks. The DEIS fails to evaluate or

87 document how the considerable loss of habitat throughout the entire Watershed and lack of adequate-for-restoration-listed-species-mitigation and in-kind mitigation measures will permit attainment of the objectives of the Endangered Species Act and other federal statutes and regulations.

Cumulative Effects of Ecosystem destruction must be addressed by looking at the entire Green-Duwamish Watershed. Ecosystem destruction in the Watershed has been accomplished by many different human practices in the various sub-basins, including

88 inappropriate forest practices, agricultural practices, and development/land use practices; pollution of land, waters, and air by industrial uses; etc. The ecosystem destruction includes wetland losses; building in riparian zones and flood planes; dikes, revetments, and bulkheads; unconnected culverts under roadways, the two dams, and other fish passage obstructions; dredging and filling; many types of water quality impairments from

many sources; groundwater withdrawals; ever-increasing amounts of impervious
88 surfaces; several fish hatcheries; fish harvesting practices; availability of habitat restoration sites and opportunities; etc.

The direct, indirect, and cumulative effects of all of this must be considered before the Services could consider allowing Tacoma to further degrade the watershed for ESA-listed fish species by such aspects of their Watershed plans (including this HCP), as current and future water withdrawals, additional water storage for municipal water supply purposes,
89 helping build a Muckleshoot fish hatchery.

Such an analysis has not been done. Sierra Club's review indicates that the HCP fails to meet the requirements of the Endangered Species Act (ESA) (and other federal laws) and associated regulations, in part because of this failure to do an assessment of direct, indirect, and cumulative impacts.

Tacoma, Seattle, and the Army Corps of Engineers, along with the Services should now get down to business and jointly work on an environmental impact statement which
90 includes the cumulative effects of the Howard Hanson Dam modifications, Tacoma HCP, Seattle-Tacoma Intertie, and the Second Supply Project. These projects are inextricably interlinked, and should be analyzed together for cumulative effects.

THE MOUNTAINEERS

Founded in 1906 to Explore, Study, Preserve, and Enjoy the Natural Beauty of the Outdoors

April 19, 2000

Tim Romanski
U.S. Fish and Wildlife Service
510 Desmond Dr. SE #102
Lacey, WA 98503

Re: Draft Tacoma Water Habitat Conservation Plan for Green River Watershed

Dear Mr. Romanski:

1 The Mountaineers is the oldest and one of the largest conservation and recreation organizations in the Northwest, with about 15,000 members. We have been interested in water issues for many years, particularly as they relate to fish, wildlife, and recreation issues. We appreciate the opportunity to comment on this proposal.

2 The Mountaineers club does not support logging within the Green River watershed lands owned by Tacoma Public Utilities (TPU). In managing the upper watershed, our club supports Alternative 9.3.2. Although TPU only owns approximately 10% of the Green River watershed, these lands are directly situated
3 in the riparian zone of the river. Logging within this zone will directly affect the water quality of the river adversely impacting salmonid species this HCP is trying to protect. The area above the Howard Hanson Dam (HHD) has been extensively hydromodified by road and railway construction with in the flood plain; many
4 miles of stream habitat are blocked by culverts; miles of salmon bearing streams have been obliterated by debris flows attributed to forest management actions; and forests have been logged to the stream edge. TPU plans to use funds received
5 from logging operations to purchase more land within the watershed and pay for
6 many of the HCP activities. During the TPU-sponsored community meeting held in Tacoma on February 29, 2000, citizens expressed willingness to accept
7 increased water rates to offset the need for logging. We encourage TPU to search for alternative funding for land acquisition, such as the Water Quality Fund. We
8 encourage TPU to begin a no-logging education program for their ratepayers, explaining the positive effects of a program of this type for the ecological health of the watershed.

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9 The science surrounding river ecosystems and flow regimes has changed greatly over the past 20 years. This is a relatively new area of study and one that is constantly in the process of learning. The methods used to set base flows, such as in this HCP, are already being criticized by scientists as not being reliable to protect fish and fish habitat. TPU should not be allowed to set a strict flow regime for the next 50 years for a river as important as the Green River, based on a rapidly evolving scientific understanding.

10 The Mountaineers club supports instream flows that will mimic the natural flow of the historic Green River as much as possible. Overall, 70 percent of the flows
11 of its former watershed have been diverted out of the Green River Basin. While minimum flows set by this HCP and by the Muckleshoot-Tacoma agreement may help to meet important base flow needs, these flows fail to meet the standards necessary to conserve and restore fish. Recent science tells us that the current methodology used is not adequate to set flows that protect the entire river
12 ecosystem - the riparian and flood plain areas as well as instream ecosystem processes. What is needed is the integration of flow regimes that encompasses the cumulative impacts of these processes. By setting instream flows, Tacoma is only concentrating on the instream needs of fish. As mentioned, the entire river ecosystem needs to be addressed.

13 The Mountaineers club has a large contingency of recreational boaters and we do not feel the flows described in the HCP are adequate for either decked canoes or
14 kayaks. The middle reach of the Green River, known as the Green River Gorge, is a world class reach for boaters. It is important that this area run as naturally as possible and that the flows mimic the natural river flow. The rocky nature of the Gorge requires a minimum1200 cfs for a classic boating experience and to keep rocks covered for safety. It is understood that because of flooding dangers during certain times of the year the high flow would need to be curtailed, but we feel the
15 recreational experience should be mitigated for in this HCP. Because of fears of water contamination above the dam, boating is not allowed. Tacoma should mitigate for this lack of recreational opportunity and manage the flow of the lower Green River accordingly. The Green River also supports a commercial rafting economy. Lower flows in the river will adversely affect this industry. By doubling the storage of water behind the Howard Hanson Dam, boating and rafting opportunities could be lost two to three months earlier, in February or March.

16 The boating experience could also be adversely impacted by the method in which the Large Woody Debris (LWD) will be introduced into the river ecosystem. According to the Corps of Engineers, much of the LWD will be left to flow down the Green River below the Headworks, coming to rest where they may, without being anchored in strategic areas. Water hydrology dictates that much of the LWD will congregate in areas that will also be natural flow areas for boaters.

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17 This could create a very dangerous situation. We suggest the LWD be anchored in inward curves of the river in order to be safer for boaters and provide still pools for fish.

18 The Mountaineers does not support doubling the water storage behind the Howard Hanson Dam for several reasons. First, the larger inundation pool will flood existing elk habitat, necessitating the removal of the elk to another, artificially created, plain. This area will be created by logging existing forest and creating this new habitat. Not only does our club object to logging as indicated earlier in this letter, but we do not feel the elk can be moved without casualties. Just recently the unsuccessful attempt at moving elk on the Hanford Reservation resulted in 15 dead animals.

19 Second, because of the severe water level fluctuation of this larger pool, TPU is proposing planting several exotic plant species in the upper banks of the pool. TPU indicated that exotic plants are needed for planting because few native species can survive under water for a sustained period of time and then thrive once water levels recede enough to expose them. Species to be artificially introduced include sedges (Carex), Oregon Ash, willows, and Bald Cypress. We have strong objections to the introduction of the Bald Cypress. This species is far removed from anything native to the Pacific Northwest.

20 After reviewing all of these considerations, it is our recommendation that TPU manage the Tacoma lands in the Upper Green River Watershed with the No Timber Harvesting Alternative (9.3.2), increase flows in the river to mimic natural flows, and discontinue consideration of the Additional Water Storage Project.

Thank you for considering these comments.

Sincerely,
THE MOUNTAINEERS

Edward M. Henderson, Jr.
President

Roger Ternes
Branch Chairman, Tacoma

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